













**FUNDAMENTALS OF  
BUSINESS ORGANIZATION**



# FUNDAMENTALS OF BUSINESS ORGANIZATION

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## PREFACE

The purpose of this volume is to show that regardless of the size or character of a business there are certain basic factors and relationships which are essential to its effective organization.

In this study these fundamental factors and relationships are determined and formulated. They are analyzed and explained as to their general applicability, their character and constituent elements, the necessity for their presence in the structure of the organization, and the most satisfactory methods to be employed in putting them into practice.

This book is designed primarily for the student of business administration. It has been prepared in response to the need for a more thorough and inclusive consideration of business organization and its problems in our colleges of commerce and business administration. Until recent years, the scientific study of this subject has been confined chiefly to the industrial engineer and the organization analyst. But their work has been largely specialized in character and individual in approach. They have made little attempt to formulate complete working principles and to present them in such a manner as to enable the student of business organization fully to grasp their significance and to master the basic methods of applying them. I have endeavored to formulate these principles; to reduce them to a relatively few fundamentals which the executive should recognize and take into consideration in constructing his organization; and to present each one in such a manner as to make easily intelligible its character, value, and application. The fundamentals of organization are not new; they have been unconsciously applied since the days of the earliest business enterprise. But through a failure thoroughly to comprehend their scope and significance, their application has usually been only partial, haphazard, and consequently ineffective.

I realize that it is extremely hazardous to venture into a comparatively new field and to attempt the establishment of

boundaries where practically none has been recognized. But in business organization, as in every other field, there must be a beginning, a basis upon which criticism and analysis can build a complete technique. If this book is productive of no other result than the inception of a keener interest, a detailed discussion, and a more general recognition of organization problems, my object in presenting it will have been attained.

I desire to express my indebtedness to those who have aided me in the preparation of this study, especially those executives and workers of business organizations with which I have been associated and those who in reading all or parts of the manuscript have made many helpful suggestions and criticisms. Among the latter particular mention should be made of Mr. George L. Bell, Consultant in Industrial Relations and Management; Mr. C. W. Banta, Vice-President of the Wells Fargo Nevada National Bank; Mr. S. B. Bechtel, President of S. F. Bowser and Company, Inc.; Mr. Minor Chipman, Industrial and Merchandising Engineer; Prof. Ira B. Cross and Prof. C. C. Staehling of the Department of Economics of the University of California; Mr. L. V. Estes, President of L. V. Estes Incorporated, Industrial Engineers; Mr. H. K. Hathaway, Industrial Engineer; Mr. Jackson Johnson, Chairman of the Board of Directors of the International Shoe Company; Prof. E. K. Strong of the Department of Psychology of Stanford University; Mr. George M. Verity, President of the American Rolling Mill Company; Mrs. E. D. Wilkie of the University of California Press; and Miss Helen Carrier, my former assistant at the University of California. I also wish to acknowledge, with sincere gratitude, the invaluable assistance in the preparation of this manuscript rendered by my secretary, Miss Marion E. Scudder.

WEBSTER ROBINSON.

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# FUNDAMENTALS OF BUSINESS ORGANIZATION

## CHAPTER I

### THE FIRST FUNDAMENTAL OF BUSINESS ORGANIZATION: DEFINITE AND STABLE POLICIES

The ever-widening field of opportunity in modern business offers to the administrator constant inducement to deviate from his usual methods of operation and even from his legitimate line of business. As a result of decreased cost and increased services the public has been persuaded to accept a greater variety of goods. Its demand has become increasingly elastic. At the same time, business has been forced to make large investments in fixed capital, building up great specialized plants for production and developing specialized channels of distribution. This has resulted in production becoming gradually more inelastic. Whereas a century ago the success of the business man largely depended upon his entrance into an unexploited field, today it depends upon his ability to steady cost and price and to maintain quality and service.

In all this confusion there must be some stabilizing force; some accurately placed sign-posts to keep the business man from getting so interested in bypaths that he loses his main road; some disciplinary restraint which will compel him accurately to establish his goal and continue working toward it; some set of standards which will guide the organization in its operation; some governor that will favor a scientific rather than an opportunistic development. The stabilizing force through which these purposes are to be achieved is provided by the policies of the organization. A policy is an accurately determined directive control which is based on definite and adequate knowledge and

which designates the aims of the business and the approximate methods to be used in their accomplishment. Policies constitute the foundation upon which the business is built and the basis upon which rest the direction and control of its performance.

The selection and formulation of policies place definite limits upon the subsequent range of operation of the business. The formation of any policy, if it is to be a valid and useful one, constitutes what might be called an implied contract on the part of the business to use only such means as may be in accord with this policy—as long as the conditions which brought the policy into existence remain approximately the same—and to make a change only after thorough investigation. Thus policies function as a general delimitation of the field of operation and outline the course which preliminary survey has proved to be the best for the business to pursue.

Although policies are definite and comprehensive, and establish narrow limits, they must not be understood as *rules* of action. They should serve instead as the outlines of a *course* of action and of the methods of procedure that must be carefully followed. The policies of an organization should not comprise a collection of omniscient rules or laws which provide an explanation for every difficulty or problem that may arise. That is, they cannot, properly, be so detailed as to offer a solution for every perplexing situation which appears. If too many details as to the methods and means to be used in running the business are incorporated in the policies, they will become inelastic and not easily adjustable to changing conditions. They should not, however, be so general as to offer merely a hazy idea of what is thought to be the purpose of the business, or an inadequate conception of the methods to be used. Policies are fact-founded directives and controls, and should furnish not only a definite goal for the business, but also a definite plan for reaching that goal.

**Types of Policies.**—The policies of a business fall into three main classes; *general*, *major*, and *departmental*, which, although distinct, are closely related to one another. This classification is largely based upon the character of the direction and control exercised by the policies, and demonstrates clearly the necessity for a complete set of policies in contradistinction to the general statement which the average business labels its “policy.” No



comprehensive set of policies can be formulated for any business until the various types which must be considered are understood. Sometimes one of the three classes is stressed at the expense of the other two; or, often, no distinct type is recognized. As a result, the business operates at random, taking advantage of opportunities as they arise, and using whatever means it may possess at the time, irrespective of future consequences.

**General Policies.**—The first type of policies of a business, the general policy, includes a definite statement of the ideal which acts as the animating force in the business and of the principles which guide the management in the conduct of the business, together with a specific expression of the purpose of the business, that is, what the business is doing and what it plans to do in the future.

*Ideal.*—There lies at the root of every successful business a “big idea” from which it has grown, a dream or an ideal that provided the motivating force for its establishment and that has kept it growing ever since. At least its progress has been guided by the ideal, even though complete realization may not have been attained. All successful business men are imaginative, and, to a certain degree, dreamers; but at the same time they are the type of men who can make of their dreams practical realities. They dreamed of some result to be attained, and worked unceasingly until the desired end was accomplished. Such was the case of George Eastman, President of the Eastman Kodak Company, who devoted nearly a half-century to perfecting a single ideal. The ideal must be one in which there is unlimited faith, that it may provide the creative impulse and stimulus necessary for fullest accomplishment.

An ideal should not be adopted too hastily. There is great danger in seizing upon an inspiration and attempting to put it into practice without due consideration that it may turn out to be nothing more than an impractical dream. The “big idea” requires time, thought, and analysis, if it is to be developed upon a practical basis. The ideal must be substantial enough to support the structure which is to be built upon it. It must be one which will conform to present economic and social conditions. The mere visualization of an ideal does not mean that it is sound—that it is capable of being worked out on a basis of facts. It

must be in accordance with sound business judgment. If properly formulated and carried out, an ideal will mean more than any other single factor in the progress of a concern, since it is the foundation for the growth of the whole enterprise and the source of all the policies by which the concern is guided. But if it is developed upon an impractical basis the result will be merely another addition to the multitude of business failures.

The great men who have been, and are now prominent in the business world, are men who have developed their idea upon a firm foundation laid by painstaking research, investigation, and experiment. Robert H. Ingersoll, desiring to make something which would be of actual service and have a wide appeal, originated the "Dollar Watch." He worked out the idea of compressing the mechanism of a small clock into a size for the pocket. He met constant difficulties, but the "Dollar Watch" finally became universally known. John Wanamaker, when developing the department store plan of retail selling which has been so widely adopted, was working not only to further his own interests but also to carry out an ideal of service to the public. He believed that such stores had a substantial economic and moral basis for their existence, and that, even though inspired by the usual desire for profits, they were of real benefit to the people.

It would be an endless undertaking to attempt to list all leading business men and their ideals. Morgan, Carnegie, Schwab, Ford, Rockefeller—the roll would be varied and endless. The pages of history and the ranks of business today are filled with men who have started with an ideal which has developed through the practical application of their dreams, into a sound business organization run on sound policies.

*Principles.*—The statement of principles in the general policy of a business outlines the standards of conduct to which the concern is to adhere in operation. As all departments of the concern deal largely with the public, and entirely through it, they must keep those principles constantly in mind, in order that every action may create a feeling of confidence in those with whom the organization is dealing. The outward manifestation of the attitude of the business must be standardized, and this is possible only when there is a definite statement of principles in accordance

with which all decisions regarding the concern can be made and by which all its actions can be judged.

Most successful businesses have based their general policies on the principles of honesty and service. John Wanamaker went into a field which from long experience had upheld the old principle of "let the buyer beware," and substituted the principle of "let the buyer be served." In the handbook of Wm. Filene's Sons Company, Boston, which is given to all its employees, is found a clear and practical statement of the standard principles which govern the conduct of all departments of that organization. The handbook reads:

A few of the principles which have proved to be so sound that they are the basis of our business success are:

1. To have always the merchandise the public wants at the time the public wants it.

2. To sell only merchandise that is dependable as to quality of material, fastness of color, of the highest standard as to style, fit, and workmanship, and correctly marked as to size.

3. Never knowingly to be undersold.

4. To sell no merchandise that is not perfect, and the best of its kind unless it is marked "seconds," "damaged," "soiled," or "imperfect," so clearly that there can be no deception.

5. To print no exaggeration, misleading statements, or half truths under any circumstances.

6. To keep our promise to customers.

7. To be as liberal as any other store in the city, in every contact with our customers. All merchandise shall be taken back without question provided it is in acceptable condition and is returned in accordance with the return rules.

8. Never to quote comparative prices.

9. To justify our honesty as to Filene value to the extent of offering prizes to the public and to employees for the detection and reporting of misstatements . . .

10. Not to use in our publicity such terms as "sales," "special price events" or similar phrases. Our stock taking sales are not in this classification. They are our way of seasonal house cleaning.

A majority of concerns could destroy the source of many misunderstandings with customers and associates and eliminate considerable internal discord by stating definitely the principles which they intend to follow. This would inevitably instill

confidence in all with whom they deal, and confidence is an essential factor in stability.

*Purpose.*—A concise statement of purpose, or what the business intends to do, is of vital importance to every concern. Success was never attained through a hazy, indefinite idea as to the real aim or the real reason for the existence of the business. The statement that, "We are in business to make a profit" means nothing. The kind of service that is to be rendered and the class of people to whom it is to be rendered are the important factors. Too many concerns have no definite policy governing their actions. They operate on an opportunistic basis, taking whatever comes their way, and probably lose with each new venture all the intangible values built up by previous enterprise. Success is achieved by planning ahead, and serviceable plans for the future cannot be formulated unless the purpose for which they are made remains approximately the same. If more concerns knew exactly why they were established and what reason they had to expect patronage, there would be less occasion for the oft-repeated comment after bankruptcy, that, "As long as they stuck to their own field they were all right, but when they started to play several games at once it was all off." A clear expression of purpose in the general policy serves to prevent such indiscriminate departure from the original course of action.

The general policy of the business must give a definite outline of plans for the future. In the case of a corporation, a general statement of the field or fields in which it has a legal right to operate is contained in its charter, and more elaborate statements are ordinarily found in its by-laws. But these are not sufficient. They are usually couched in general phrases to allow for broad interpretation, and the business manager needs more specific directions to guide him in his work and to aid him in his judgments if his aims are to be clear and his decisions consistent. General policies serve this purpose. They state what the business intends to do, what product it is to produce or handle, in what market it is to operate, to what class of people it is to cater, and whether the business is to be speculative or conservative. In other words, a statement of the general policy indicates exactly what the business should be doing at any future time.



**Major Policies.**—The second type of policies of a business, the major policies, should conform to the general policy and give scope to it by designating the operating methods of the concern. As they are formulated for the purpose of directing the business toward the goal established by the general policy, it is essential that they compose a homogeneous group, each supplementary to, and in conformity with, the others, but each absolute in its own specialized field of direction and control. While it is both unwise and impossible, because of the great variety of businesses, to give a list of all the various types of major policies and of the subjects with which they deal, it will nevertheless make the matter clearer if some space is devoted to a consideration of a few of the major policies which must be found in all businesses. This consideration, while manifestly incomplete, illustrates the principles upon which the major policies are based. The business man will find, when he makes the analysis necessary for the formulation of major policies, that the various elements which must be included will fall naturally into line.

Major policies are divided into internal and external policies. The internal are concerned largely with the production of the commodity and relate to such matters as finance, extensions, organization, production, purchasing, personnel, etc., while the external policies relate to distributive elements such as sales, price, advertising, credit, and collections.

**Internal Major Policies.** *Finance.*—Among the most outstanding of the internal major policies are those regarding finance and extensions. The success of a business is largely dependent upon its preserving a properly balanced financial structure. This balance can be maintained only when the resources of the company are properly analyzed and the operating methods are made to conform to them. The financial policy necessarily covers such elements as the means to be used in obtaining permanent and temporary capital, the methods to be followed in financing credit and sales, the general balance to be kept between working capital and fixed capital, the ratio to be preserved between current assets and current liabilities, the reserve to be maintained, the distribution to be made of earnings, the sources of capital from which extensions are to be provided, etc. The important element in the financial policy, as in the other major



policies, is that it must embody definite methods which fit the needs of the business, taking into consideration the conditions under which the latter is operating.

*Extensions.*—The policies relative to extensions are naturally very closely connected with the financial as well as with the general policy of the business. The consensus of opinion seems to be that the best extension policy is to pay for all development out of profits, that absolute necessity is the safest rule for expansion, and that gradual growth is desirable except in the case of speculative enterprises where it is impossible.

During the war, there were evidences of a lack of fixed extension and financial policies in various businesses. Many firms, when they saw the large profits available for the taking, rushed headlong into production and contracted enormous debts for the enlargement of their concerns. These firms had no fundamental policy to guide them in their expansion. The caprice of the manager or owner determined what extensions should be made. When the decline came, in 1920, they found themselves swamped with overproduction and faced with curtailed markets in which to distribute their greatly increased output. The result in some instances was failure; in others, assumption of heavy losses in the disposal of unnecessary equipment and the sale of surplus stock. Certain businesses came through the crisis with a comparatively small loss because they had a firm policy which forbade sudden expansion; they were not compelled to curtail their activities, but merely continued with the course of action previously decided upon.

*Organization.*—Since the manager must exercise his functions through an organization, there arises the need for a policy to regulate the development of that organization. Some of the matters to be considered are the form and type of organization to be used, the degree to which it is to be functionalized, the delegation of authority and responsibility, and the major facilitating and controlling factors to be employed. The organization policy acts as a framework about which the departmental policies are built. It is the peg upon which the whole system is hung.

*Production.*—Under the general head of production come those policies which relate to design, material, equipment, methods, and regularity of operation. Although the policy with regard to

standardization is properly a part of the general policy of "what is to be made," it is also so closely related to production that it should be mentioned at this time. The International Shoe Company, for example, insists at all times on absolutely standardizing the quality and construction of shoes. They operate forty factories, all of which, with the exception of three or four devoted to filling special orders, make shoes solely on standard specifications. Their effort has been to operate these factories continuously and uniformly. During 1923 there was not as much as 5 per cent variation in their weekly production, except in weeks where holidays prevailed. They have never closed a factory for lack of business for 30 days in 15 years. They feel that under conditions of standardized quality and uniform operation they can produce shoes of like quality at less price than people who resort to other methods.

*Purchasing.*—The purchasing policy of a concern will obviously be governed to a great extent by the requirements of the production department and by the financial policy of the business. It covers such items as sources to be used or developed, inventories to be maintained, long- or short-time contracts, speculative or conservative buying, etc. The majority of concerns usually purchase from the market that they can develop to their greatest advantage, using those methods best suited to the requirements of their financial and production policies.

*Personnel.*—Since the human element and its control is one of the most vital factors in business, the personnel policy requires careful consideration. This policy cannot be one solely of altruism, but must be based on adequacy and expediency. It includes the attitude of the company toward employees, unions, collective bargaining, scientific personnel management, welfare work, scientific wage systems, profit-sharing, employee housing, executive promotion, types of labor to be hired, the general scale of wages to be paid, and many similar matters concerning personnel. If more managers would realize that it is impossible for them to handle workmen in the same way that they handle machinery, they probably would take greater care in formulating a policy concerning this troublesome element. The most successful administrators of recent times have emphasized more than any other one thing the necessity of a definite personnel policy in

order to obtain effective operation. They feel that loyalty and *esprit de corps* within the organization are of supreme importance and that these requisites are attained only by sustained and guided effort. For example, policies such as that of Carnegie, in whose organization vacant positions were always filled from within the ranks, and that of the concern in which the younger members were to be pushed to the front, are illustrative of the sort which engender loyalty and trust among the employees. If an attempt were made to develop the niceties of the problem of controlling the human element embodied in the multitude of labor policies followed during and since the war, there would be encountered a heterogeneity of diverse opinions. These policies, however, contain throughout a common tendency to ameliorate the condition of the worker and to stimulate him by providing rewards for individual endeavor and achievement.

**External Major Policies.** *Sales.*—Fully as important as the internal policies of the business are the external policies, which relate to distribution. Primary among these is a statement of the sales policy. It includes the markets to be developed, the classes of people to which the appeal is to be made, the channels through which the business will market its goods, whether through brokers, jobbers, branches, local agents, exclusive territorial agents, or retailers, etc., trade agreements and contracts, the attitude of the business toward distributors and competitors, and similar items. The service that the company intends to render is also an important part of the sales policy and involves the attitude that the firm is to take toward its customers, ranging from personal contact with buyers in the professional and retail lines, to quality of product and delivery of orders in the manufacturing concerns. The sales policy is often the result of a compromise between the best methods which the concern could use if its resources were not limited, and the methods that the actual resources available at the time of the policy's formation make possible.

*Price.*—Although the quality of the article offered and the service extended are the main features governing salability, price is extremely influential. Price policy covers such elements as mark-ups, variation in quotations to different purchasers, resale prices, price guaranties, price changes in a rising or falling market,

discounts, rebates, special sales, etc. Although price is largely controlled by external factors beyond the power of the business man to regulate, it is nevertheless important to formulate a policy as to procedure in price fixing. The present emphasis on the one price policy illustrates this point. Wanamaker introduced the plan into retailing, and thereby revolutionized the trade, for it has been widely adopted throughout the retail field. The International Shoe Company established a policy of stabilizing their prices in so far as possible. Except under very extreme conditions they do not change their prices oftener than twice a year, when new samples are made up and the salesmen sent on the road. They try to make all necessary changes at these times, and have taken losses on goods during the latter part of the period, in order to maintain their prices on a basis of at least 6 months.

*Advertising.*—The advertising policy of any business is determined by the character and amount of the product, the market to which it appeals, and the amount of money available for publicity. It is closely bound up with the sales policy and largely subsidiary to that policy. The main items ordinarily taken into consideration are: the annual appropriation and its time distribution; the media to be employed; the type and character of the copy; the distribution of advertising as to locality, *i.e.*, whether it will be local, national, or international in extent; whether the concern will do its own advertising or turn it over to an agency, etc.

*Credit.*—The credit policy largely depends upon the financial policy and the methods of distribution. A concern must decide whether the credit policy is to be liberal or conservative, not only with respect to the time allowed for payment but also with respect to the amount of credit to be granted. Since the credit department should be under the financial department, this policy in many cases is governed by the financial departmental policy. The same holds true for the collection policy. Nevertheless, as both affect the public, and are immediately influential in getting and retaining business, it is ordinarily wise to formulate in a definite way the methods to be used in extending credit and making collections.

**Departmental Policies.**—The third type of policies of a business, the departmental policies, designate the way in which the organi-



ization is to segregate and combine its functions, and the methods and systems it is to use in the exercise of these functions. Comprehensive and specific though the major policies may be, they alone are not sufficient to direct and control the intricate functions in the operation of the various correlated departments within an organization. Although the departmental policies pertain each to one department only, they must necessarily be in harmony with the general and major policies, since they develop the latter in greater detail. They give more specific expression to that major policy which particularly refers to their functions, and which, in its general application, would not be sufficiently detailed to direct departmental work effectively. In other words, each department definitely decides on the best methods and means to use in discharging the numerous duties it has to perform. These are made standard for the whole department and embodied in the departmental policies. Uniform action in rendering judgments and directing operations can then be secured.

While the major policy relating to personnel, for example, might include a clause stating that the company considered itself responsible for the welfare of its employees, the policies of the personnel department would define the exact methods to be used in meeting this responsibility. These methods would include the amount and form of medical and dental service, housing and transportation facilities, provisions for recreation, employees' insurance, etc. If the major personnel policy stated that education was to be provided for the workers, with a view to increasing their earning capacity, the departmental policies would specify the program to be followed. One might provide for Americanization classes; another, for technical instruction directly related to the work of the concern. Still another would settle the question of whether the time utilized for instruction should be company time or employees' time. All these departmental policies must be formulated with a view to selecting those methods which will use to best advantage the facilities available within the department.

**A General Business Policy.**—It is impossible to reproduce a complete statement of the general, major, and departmental policies of an important concern, on account of its length and the large amount of detailed information involved. A good



example of a general business policy, however, is that of the American Rolling Mill Company. The statement of this policy also includes certain elements which ordinarily are found in the major policies of an organization operating on the basis of established principles. G. M. Verity, president of the company, states that:

We eventually formulated our policies into a definite printed statement that placed our company squarely on record before all those interested in it in any way, in the belief that every one who has an interest in a corporation has a right to know all about its policies. The most important of these policies are:

1. To do business guided and governed by the highest standards known to the business world.

2. To strive for that sort of "reputation" in all things as will make "reputation" an invaluable asset.

3. To provide the best equipment obtainable, suitable to the particular needs of our business, both from the standpoint of economy in maintenance and operation, and in efficient performance . . .

4. To build up and maintain a high-grade, efficient, loyal, ambitious, aggressive, and successful working organization of individuals who thoroughly believe in their company . . .

5. A working slogan of quality and service, representing quality in plant property and equipment in organization and in product, and service to stockholders, customers, and to our city, state, and nation . . .

6. To be never satisfied with anything less than the best results possible of attainment in each and every proposition or problem to be solved.

7. Believing in the principle and theory that one cannot serve two masters satisfactorily or successfully, employees holding important positions with the company should not become financially interested in any company with whom The American Rolling Mill Company does business either in buying or selling.

8. To be consistent in the application of our policies to each and every situation. To accord to each and every individual connected with the company such degree of consideration and firmness as their individuality requires, and the situation being dealt with demands, in a proper conduct of the business.

9. To create a working partnership and a real spirit of cooperation between the community and industry, to the end that community conditions might, as a whole, respond to the highest needs of that type of stable, sober, industrious, efficient, thrifty, and ambitious man that

we felt was necessary to make a real success of our high-grade and complex industry . . .

10. To create through the adoption and operation of these policies such a condition of mutual confidence . . . and of loyalty between ARMCO, its organization, its customers, its stockholders, and the communities in which its plants are located, as will make for permanence, progress, and profit.

11. To recognize in proportion to our prosperity, our obligations to the state and nation . . .

12. To develop and encourage Americanism and a real, live spirit of patriotism, within and without our organization.

13. In the treatment of customers: to be fair always, never to exact the "pound of flesh"; to be considerate; to make our promises as to quality, delivery, and service so conservative that we can, on the average, give more than was agreed—an unexpected dividend, so to speak, on each transaction; and to make courtesy and service an outstanding feature.

14. To consider in all things that make for success or failure, what is the best interest of the business as a whole, the joint interest of all.

15. To build up financial connections in advance of their need, and always to keep them fully informed as to the progress of the business.<sup>1</sup>

**A Major Business Policy.**—The personnel policy of the Wanamaker stores is an example of a comprehensive, clearly expressed major policy. It reads:

**As to the Working People:**

(a) An admission as a fundamental principle that workers are entitled to further considerations beyond legal wages, covering their welfare and their education.

(b) To see that employees are not overreached or overlooked, and making it possible that there shall be nothing between a man and success, but himself.

(c) To provide education to employees as the only means of doing what legislation or combination cannot do, the improvement of their earning capacity, and thereby assisting to remove the antagonism of labor and capital, adding to the sum of human happiness.

(d) That the education provided shall not include the dead languages or other unuseful studies to the detriment of the practical and technical everyday work studies that aid in making a better living.

(e) That the education must at the same time go towards the development of character in order to enable the man to better engineer his life

<sup>1</sup> VERITY, G. M., "How We Made Last Year Our Best Year," *System*, vol. 42, pp. 22-23.

to higher living and greater happiness, as well as to earn his daily bread.

(f) To keep foremost the observance of the spirit as well as the letter of the laws that govern our business transactions and relations to each other.

(g) A fixed plan of retirement of employees on retired pay to give rest and recreation to the old, and chances to the younger people for promotion.

(h) A Court of Appeal, chosen by the employees, to hear and adjust impartially any complaint the employees desire to lay before such a court of reference.<sup>1</sup>

**Characteristics of Sound Policies.** *Definiteness.*—No matter what policies the firm follows, and no matter what distinctions are made between them, the policies themselves, as Mr. Verity emphasizes, should be definite. They should be so clearly formulated that it is possible to place them on record. A policy that is indefinite and uncertain is of no value to a concern, and in many cases will do considerable damage. Just as the business man is skeptical concerning his dealings with a firm about which he lacks reliable information, so likewise the public, the stockholders, and the employees of an organization are skeptical concerning policies which are too vague to be expressed in writing.

The majority of business men, if asked whether or not they have a set of policies by which their businesses are directed and controlled, would reply in the affirmative. But how many could make a specific statement of these policies? These men necessarily follow some plan of action, good or bad, and so cannot fail to follow some kind of a policy, equally good or bad. The main trouble is that the administrators themselves have no exact conception of their policies and know only in a general way whether or not they are of benefit to the business. A clear and definite statement of policies would remedy this situation.

*Stability.*—In order to maintain the confidence, trust, and operating value secured by such a statement it is essential that the policies be fundamentally stable. The policy which has produced good results and is fact-founded should not be arbitrarily changed for some other, simply because the opportunities are tempting. A firm which is constantly altering its basic policies will not attain as great a measure of success as the one

<sup>1</sup> "Golden Book of the Wanamaker Stores," vol. I, pp. 121-122, 1911.

which pursues a stable course, departing from it only as changes in economic and social conditions require.

A prominent hosiery company, for example, had an original policy of manufacturing only standard lines of popular price hosiery. It decided, however, to branch out and make lace stockings at a time when there was great demand for that kind of hosiery. By the time the firm's brand of lace stockings was well introduced the fad ended, leaving the firm with a considerable amount of idle machinery and a large quantity of unsalable stock on hand. This experiment convinced the company that stability, rather than flexibility of policy, was desirable.

Jackson Johnson, Chairman of the Board of Directors of the International Shoe Company, arguing for stable policies, declares that his experience has taught him over and over again that:

. . . when you prove to your satisfaction that a policy is profitable and right, stick to it. I think probably we all tend in the direction of building in an opportunistic way . . . We never lightly depart from the main features of our established policies . . . Our business, we believe, succeeded because we chose a certain field of operation, and in that field our methods found favor.<sup>1</sup>

Stability of fundamental policies does not mean stagnation. It does not indicate old-fogyism, a necessity for the rejection of new ideas, or a lack of progressive ideals. As Mr. Johnson further states:

Expansion is a different matter. Every healthy business expands . . . But no really healthy business is constantly abandoning its established field of operations, or the fixed policies that have aided it to achieve success. It is natural to get tired of old things and want a change. But change for the mere sake of change is bad . . . What I wish to emphasize is this: Certain fundamental policies in our business are sound and right. Otherwise it would have died in infancy. Those fundamentally right principles are the guide posts on which our eyes constantly rest.<sup>1</sup>

In every well-organized, successful business the consensus of opinion seems to be that the fundamental general policy is not

<sup>1</sup> JOHNSON, JACKSON, "What Makes a Business Go," *System*, vol. 36, p. 207.

to be changed so long as that firm remains in the same line of business; that the major policies are to be altered only when changing economic and social conditions or the modification of the business makes it absolutely necessary, and then only after a thorough investigation, first, as to whether the new conditions are permanent or only of passing significance, and second, as to whether the new policies to be adopted are the best under the new conditions; and that the departmental policies, or means of applying the general and major policies, are to vary in order to adapt the business to minor changing conditions. Thus stability and flexibility in the policy group are secured. Were *all* the policies fixed, progress would be impossible. Were *none* of the policies fixed, advance would likewise be destroyed. Success is achieved by adopting the middle course of stabilizing the larger policies but allowing flexibility in those which direct and control detailed operation.

**Why Policies Are Indispensable to an Organization.**—Among the almost innumerable qualities which make definite and stable policies indispensable in securing the efficient operation of a business, the following are outstanding. Policies establish a definite aim for the business and serve as a basis for a plan of action, as a controlling factor in coordinating the otherwise decentralized efforts of the various departments, as a builder of company spirit and efficiency, reputation, and confidence, and as a foundation for permanency. They force the organization to maintain an orderly arrangement of effort by establishing directive, supervisory, and control factors which pervade all departments.

**To Establish a Definite Aim.**—The greatest need in the average business is a more perfect recognition of its larger purpose. To meet this need requires a clearness of final aim which can be maintained only by the constant direction of a non-personal force. Definitely expressed policies supply this direction by forcing those in control of the concern to formulate distinctly what they consider to be its purpose, and the methods and means to be used in accomplishing that purpose. An indefinite aim has often resulted in the multiplication of product or service to a degree where efficiency is lost, and, in many cases, to a point



where a totally new business has drifted into existence on the remains of the old.

Numerous examples of this type are found in the concerns which are continually forgetting their main purpose and stepping over into allied or different fields not suited to their resources or methods of operation. Such, for instance, are manufacturers who deal in raw materials, wholesalers and retailers who speculate in goods; such also are those who make it a practice to produce goods or services which they are not in an advantageous position to make or render. The temptation of immediate profits is frequently so strong that they fail to recognize the dire consequences which their action will bring both to their reputation and to their organization. A strong set of policies rigidly adhered to will prevent such a move which for the time being would virtually destroy the original aim of the business.

**To Afford a Basis for a Plan of Action.**—Furthermore, policies, by affording a basis for investigation or a foundation for a plan of action, counteract the too common tendency to disregard proper analysis of the future of the business. If only for their own protection, those operating the business are compelled to investigate in order to determine whether or not the most effective methods are actually being employed. When the conclusions based on such analyses have been definitely expressed, the managers have gone on record as stating unequivocally that: "These are the best methods and means available for our present conditions."

**To Coordinate Departmental Action.**—When it is considered that every division of the business tends to operate largely as an independent unit unless properly controlled, the need of a complete set of coordinating policies becomes even more evident. The production manager's desire for low cost even at the expense of quality and service, the sales manager's inclination to obtain orders regardless of the plant's ability to produce the supply, the financial manager's distaste for expenditures even at the expense of future savings, the credit manager's temptation to refuse orders at the cost of sales, the advertising manager's propensity to create demand irrespective of the sales channels in use, the purchasing agent's tendency to purchase in quantity regardless of the company's financial condition—all these forces must be



curbed and brought into a coordinate whole. The greatest factor in securing this result is a system of sound policies which will insure that the same idea, methods, and spirit pervade every part, thus harmonizing the thought and action of all departments, executives, and employees. Without such a common aim and guide, much of the personal efficiency in the organization will be lost through work being performed at cross-purposes.

A common knowledge of policies makes possible the delegation of authority and responsibility without loss of coordinated action. If there are no recognized standards of procedure, it is unwise for a manager to delegate authority because he alone, if anyone, understands the aims and methods of the business. All matters must receive his sanction before being put into effect, if all effort is to conform to his ideas. The inefficiency of such a type of organization has long been recognized. The presence of a clearly defined code of procedure makes it possible to leave each department to its own resources and ingenuity to execute its orders as it sees fit, so long as they are carried out in accordance with the major directives established. When the policies are definitely expressed, not only the executives, but also the entire personnel of the organization have something tangible with which to work. Although it is not possible to explain to all the workers why certain orders are issued, it is possible to explain the reason for certain policies. Each separate order can then be considered as an expression of these policies. With this basis for interpretation, the employees will be able to understand the order, and understanding is the first essential for correct performance. This knowledge will also tend to preserve the goodwill and loyalty of the workers, whereas they are otherwise inclined to distrust the intent of the company through failure to comprehend the motives prompting its action.

**To Create and Maintain Public Confidence, Reputation, and Goodwill.**—Definite policies are also an important business factor in creating and maintaining public confidence, reputation, and goodwill. The average supplier, distributor, and consumer are favorably impressed by a frank statement of the policies of the concern. It gives them specific evidence of the firm's intentions, so that they can expect uniform procedure and can plan accord-

ingly. Reputation is a product of consistency, and consistency is a product of well-defined codes of action.

The business without fixed policies, although it may build up and keep a trade for a certain time, tends to lower its standards through carelessness and overconfidence. This trait has been particularly characteristic of those businesses in which service plays an unusually important part. For example, many specialty stores that have built up a high-class trade sacrifice it by a temporary sale of cheap goods, giving up reputation and goodwill in order to make an immediate profit out of what probably was considered an unusual opportunity. Adherence to definite policies would prevent such errors and preserve the standing of these concerns.

**To Insure Business Permanency.**—Another service of firm policies is to further the permanency of the business. When one man runs an organization, makes all the important decisions, studies conditions, and draws conclusions from his own investigations, he probably will not do so in conformity with any system of definite principles of procedure. Consequently, when he dies or retires, the business is left to shift for itself. His successors find no precedents, no statement of principles or recognized methods which are to be observed in operating the concern or in making decisions. Thus the business becomes disorganized, falls into bad practices, and possibly fails altogether, merely because there was not built up and maintained a set of strong fundamentals upon which to base continued operation. Good policies are necessary to insure its establishment upon sound and solid bases, not upon the mere pursuit of elusive profits.

**Factors Influencing Policy Formation.**—The biggest problem of the business man is not in understanding and appreciating the value of these types of policies, but in properly selecting those which are suited to his own concern. While it is impossible in a discussion of this character to establish definitely the methods of procedure that any one business man should use, at least the general elements which must be taken into consideration can be outlined. The administrator must first realize that there are certain controlling factors by which his selection of a policy will be governed. The most dominant of these factors is the social

control imposed upon him by the present organization of society. This control is manifested in various ways, sometimes in the form of a code of ethics, and often in rules and laws which prevent the business man from formulating his policies on a purely personal and selfish basis. Business associates and the general public are taking an ever-increasing interest in the way business is conducted and are presenting their opinions through association rules and regulations. The strongest manifestation of social control lies within the laws themselves. If, for example, a business in California which employs women desires to follow a policy of retrenchment, it cannot do so by cutting the wage below the legal minimum established by law, or by increasing the working day beyond 8 hours, or by economizing so rigidly that safety devices are neglected and necessary repairs are not made, no matter how imperative it is that the reduction be effected. Government, through its laws and enforcing bodies, is continually exercising its power to investigate and control external business practices as well as the relation of the business to its employees. Hence a great body of corporation laws, laws regulating production, commerce and trade, methods of competition, etc., has developed. All of these are limitations upon policy formation which the administrator must take into account.

Consideration for public opinion, even when the latter is not expressed in law, does not rest on a purely ethical basis, although public opinion often regulates action along moral lines. It is of practical value to the administrator not only to keep within the law, but also to adopt such policies as will not injure his reputation in the public eye. Public opinion is the judge of a firm's reputation, and business policies are not valid unless they conform to the changing viewpoint of the public.

While the foregoing controls have been largely foisted on business by a society at large, there are other external controls, equally important, which are not of social origin. Business is affected as strongly by the organization of the economic institutions through which it must carry on its transactions as by controls of social origin. It has, for example, no power to change the operation of the financial system from which it obtains credit and through which it markets goods and securities. Only to a comparatively slight degree can it regulate the price

which it places upon its goods, since no concern can control the dominant forces of supply and demand without the possession of monopoly power.

The business man, in short, is hemmed in on every side by existing conditions and institutions. He will find the course which he must take, the policies which he must follow, especially as regards his external relations, to a great extent already mapped out for him.

It is equally obvious that the resources, personnel, and character of the business constitute some of the strongest influences in policy formation. These factors are mentioned because administrators are daily seen installing policies totally unsuited to their businesses, simply because they worked satisfactorily in some other concern. It is probably true that there are certain basically sound policies which every business may safely follow; nevertheless, even these policies should be adopted only after they have received the same careful scrutiny that is extended to all policies to determine whether or not they are well suited to the particular conditions existing within the business concerned.

**Relation of Policies to Standardization.**—Stable policies are largely the result of the growth of standardization in business. As long as business operated on an opportunistic basis, taking what came within its reach and getting all possible orders by any means suitable to the occasion, and as long as it was controlled more by the whims of the purchaser than by any logical or clearly defined course which the concern planned to pursue, definite and stable policies received but slight attention. There was no place for them in the industrial and commercial system, no reliable information upon which they might be based. It was only after the establishment of long-time objectives, which came as the result of standardization, that they were recognized as a fundamental factor in organization. The era of planning ahead, of standardizing business on the basis of accurate data gathered through commercial and industrial research, analysis, and experience, made necessary and possible the formation of well-defined and lasting policies by which the business might be controlled. It is adequate knowledge of industrial conditions and of the market that makes it safe for the modern manufacturer to standardize and to plan his policies in advance, and that



enables the modern distributor to accept his goods without question.

**Methods of Developing Policies.**—A study of a large number of concerns reveals great difference in the methods used in developing policies and in laying the foundations upon which these policies have been built. Some concerns decided upon the type of work to be done but did not develop the policies necessary to carry on the work. In the average case, this neglect was probably the result of a belief that, because there was a demand for the products of the business, the business would automatically be patronized and would naturally operate as it should. The managers of such businesses were usually of the type of men who remained in their offices trifling with details to which a clerk could attend while their concerns were left to develop as they would. Other concerns formulated their policies, if they can be properly called policies, solely on a criterion of personal experience. These businesses, consequently, without information concerning the best way to handle their markets and control their own internal operations, and entirely dependent upon the rule-of-thumb methods and means of their managements, drifted along solving all problems that arose as they saw fit at the time and wondering why business was just one problem after another. This working in the dark resulted in the continued use of old and inefficient methods, to the complete disregard of new and more effective ones.

The policies of the average business, it has been found, are based upon an experience rating; that is, the general manager, hoping to modify and supplement his own personal experience, has made a study of the methods being used by similar concerns, and, combining his own knowledge with these methods, has thus formulated the policies of the business. The great danger in following this method is that the personal equation may enter into the final selection. All men tend to favor that which they understand, in opposition to that which is complicated or new to them. Their judgments are, therefore, largely the result of personal experience. At best, their decisions are based on manifestations, when they should be based on the causes of these manifestations.

**Scientific Establishment of Policies.**—An analysis of the methods used by the more successful and progressive concerns

has shown that modern business men are placing increasing emphasis on fact-founded, scientifically established policies. They have learned that policies cannot be built upon guesses or suppositions; that it is necessary to accumulate a supply of accurate information before a definite and stable directive and controlling force can be formulated. Therefore they make a broad and thorough analysis of the purpose of the business and a careful investigation of specific methods of operation before they select their general and major policies. They realize that there are technical men in the organization who, in their various departments, are in possession of a great mass of vital information which must be drawn out, interpreted, and correlated. They not only take advantage of the plain facts before them, but also gather from every corner of the business any information that will aid in showing the present position of the concern and the wisdom or inadvisability of its methods. They further realize that the wider the knowledge of the field to which it applies, the better will be the policy, since any policy which is not based upon accurate and comprehensive information will be as truly speculative as that which was deliberately planned to be so when it was formulated.

The scientific use of information in policy formation largely removes the speculative element. It eliminates the human equation and overrules personal prejudice and fancy. It prevents the use of traditional methods and means unless they have been scientifically proved to be the best. The result is that the foundation of the business and the framework around which it is built are based on fact instead of on conjecture.

The determination of policies is a matter of judgment. They will be good, bad, or mediocre, according to the basis on which the judgment is made. Unless the business man desires to bring in a research specialist, the most satisfactory list of sources of facts readily available will be found in trade journals, current technical magazines, technical books, and in the numerous books and articles on industrial and commercial research and analysis. The scope of the present article will not permit the inclusion of such a list. The important point is that the studies must be made first. Only after this has been done can a definite and stable policy be adopted with absolute assurance that it will



bring to the business the greatest possible amount of success.

**Responsibility for Policy Formation.** *Individual Enterprise.*—The responsibility for policy formation varies with the different forms of business organization. In the enterprise owned and managed by one individual, the person most interested in the ultimate success of the business is, of course, the owner. He, therefore, ordinarily formulates all policies and is solely responsible for their success. Although he may have under him a manager and possibly department heads who aid in deciding upon the departmental policies, he is nevertheless the main factor in shaping them. It is obvious that no such one-man business can grow very large, because its size is limited to the capacity of the individual at the head of it.

*Partnership.*—In partnerships there are many forms of internal organization, and each form usually has a different method of originating policies. Two of the most common may be briefly outlined as follows. In the first, the departmentalized partnership—the one which is usually the most successful—the general and major policies are determined by all the partners in conference. In this way, a coordinated set of comprehensive policies is formed, for while each partner has his own department in mind, he also has in view the good of the business as a whole; and from the blending of the opinions of all the partners comes a well-rounded group of policies. Each partner, however, is supreme in the formation of the departmental policy for his particular field. Take, for example, the Baldwin Locomotive Works, which was a copartnership until 1909. In this organization each active partner was in absolute charge of a department and formulated his own departmental policies, the only stipulation being that these should not run contrary to the broad policies of the business, which were formulated by all the partners in conference.

In another type of partnership policy formation there is no departmental specialization by the partners, but each has complete control of the whole organization. While policies are formulated by the partners in conference with one another, there is also a tendency toward the separate formulation of policies for all departments by each individual partner. In this way conflicting policies are set up, cooperation is lost, and the machine is

soon fighting against itself. There are many examples of this type of policy formation in the smaller businesses, each partner believing that because he owns a part of the business he should have the right to direct any function. A complete set of policies is especially necessary in a partnership, so as to avoid the danger of overlooking the fact that the business is organized for a definite purpose and that to be successful it must have unity of action on the part of all the members of the organization in carrying out its work.

*Corporation.*—The responsibility for policy formation in the corporate form of organization is more widely disseminated than in either the individual proprietorship or the partnership. The sharp cleavage between ownership and management ordinarily found in a corporation complicates the problem. The manager is required to conform strictly to the will of the board of directors, who represent the owners, while at the same time he must conduct the business by means of what he considers the best methods and resources available. This is not a simple task, especially when the board of directors is largely made up of men who take no active part in the operation of the corporation. In this separation of ownership and responsible management lies the greatest weakness of the corporate form of organization. To offset this weakness, emphasis must be placed on the formulation of the policies by a central body, or bodies, in order to obtain a coordinated group to be followed by all parts of the organization. This centralization in policy formation may be obtained through the board of directors and the executive council, which is composed of the executives in charge of the various departments.

**Formulation of the General Policy.**—The general policy of a corporation should be formulated by the board of directors in conjunction with the president and the general manager.<sup>1</sup> They interpret the will of the stockholders as to the general nature of the business, the special type of work it will do, and the general attitude which the concern will take toward its market. This body, being responsible for the administrative direction of the organization rather than for its supervision and control, is in a position to determine those policies which finally affect the whole

<sup>1</sup> Ordinarily these last two officers are members of the board of directors.

business but which are not closely tied up with its technical direction. It should therefore be composed of observing men who have a broad knowledge of the economic outlook, and who are capable of formulating a basic course of action for the corporation in accordance with general business conditions. The general manager, aided by his department heads, is able to furnish to this body specialized knowledge concerning the trade situation in the field in which the corporation is operating, and information as to the practical working out of the policies under consideration. In this way proper balance between the general and the technical knowledge used in policy formation is maintained, provided the general manager is an aggressive individual and the board of directors is made up of reasonable men. Excellently composed for policy formation is the board of directors of the National Cash Register Company. The board is made up solely of those who have developed and still largely own the corporation, together with the president, general manager, treasurer, superintendent in charge of production, sales manager, and comptroller. Any general policy, in fact any policy which comes from this type of a board of directors, will invariably be practical and easy to follow, since those who formulated it are largely responsible for its enforcement.

**Formulation of the Major Policies.**—The major policies should be formulated in part by the board of directors and in part by the president in conference with the general manager and his chief executives. Those major policies which have a direct bearing on the general policies (such as the basic production, sales and financial policies, and those which involve extensions and large capital investment), should receive their final sanction from the board of directors, although they will in most cases be originated and introduced by the general manager. There is great danger that the board of directors may extend its control beyond these limits, withholding from the general manager authority to determine other major policies, and thus taking what is equivalent to an active part in the management. When this happens chaos soon results and the organization finds itself functioning without a responsible operating head. If the general manager has not the authority to select the methods that are to be used while he is in charge, without the consent of the board of directors,

he cannot be held to answer for the proper operation of the concern. This authority is not merely the right, but its exercise is the duty of responsible management.

The manner in which the manager formulates and chooses the major policies which are within his jurisdiction largely determines their value to the organization. If he retires to his office and there makes a personal decision, even though he has all the available data, the policies will reflect only his own point of view; and managers, being human, tend to favor certain departments in which they have a special interest. Furthermore, unless the manager has an unusual capacity for detail, and thoroughly understands the technical working of each department, he will not be able to appreciate the effects of a policy on all the departments to which it applies. All major policies should be selected by the general manager in conference with the executive board, each head being held responsible for the presentation of that policy which chiefly controls his department (the sales manager, for instance, presenting the sales policy). This gives the various specialists in charge of departments an opportunity to thrash out each suggested policy in the light of its effect on the different divisions. The final decision, however, should be made by the general manager. Only by such procedure is it possible to secure a sound, coordinated set of policies, each supplementary to the others but absolute in its special field—a set of policies in which the executives may have undivided faith.

**Formulation of the Departmental Policies.**—The departmental policies, stating how each department is to conduct its activities, should be formulated by each department head in conference with his chief assistants. Thus is insured a homogeneous group of policies, based upon the specialized knowledge and experience of the various members in the department, with respect to the functions which they perform and the resources at their command. The many differences of opinion as to methods of operation and responsibility for functions, which cause so much dissension in the average department, are ironed out, and departmental *esprit de corps* is built up. As previously mentioned, when each department independently formulates its own operating policies, there is great danger that it will become overspecialized, that departmental interests will be magnified and stressed to the detriment



of the organization as a whole. Hence provisions should be made for a periodic review of these policies by the executive council, for the purpose of determining their relation to, and their place in, the structure of the organization. In this way the business is kept in balance, and the aggressive executive is unable to assume more authority than actually belongs to his department.

**Testing the Policies.**—The policies finally adopted should be considered as still in the formulative stage. Their operation must be carefully watched in order that changes may be made to suit conditions not previously recognized. This testing process should continue under the close supervision of the department which is chiefly concerned with the particular policy that is being tested. The most satisfactory method is to hold periodic meetings of those directly concerned with the enforcement of the policy, for the purpose of presenting reports of special investigators and of analyzing the problems which have arisen in connection with its operation, particularly those concerning the validity of departures from established procedure. This thorough investigation and explanation of past actions makes possible a decision as to the serviceability of the policy and as to the limits within which deviation without executive sanction is legitimate. In this way the policies are being continually improved and adapted to changing conditions. As a result, even in the case of a major policy, only a change in principle requires the attention of the general manager and the executive committee, and then for but a short time.

There is a common tendency among business men to throw out any policy that has not produced the results anticipated. Unsatisfactory results alone, although they may seem to indicate the necessity for discarding or revising a policy, should not be considered sufficient evidence for condemning it. Further investigation may reveal that it is not the policy itself, but rather the methods and means of carrying it out, that are at fault. No policy, however commendable, can be of any appreciable benefit to the business unless it is followed consistently throughout the organization. Neither can the policy function effectively when the facilities for putting it into practice are inadequate, thus imposing limitations which hinder attainment of the desired



object, but which are in no way attributable to fault in the policy itself. Consequently, when a scientifically formulated, fact-founded policy fails to come up to the standard of performance expected of it, it is well to investigate not only the basis upon which it was developed, but also the details of its operation. Is the entire personnel thoroughly informed as to the meaning of the policy? Are the workers in possession of all the instructions and equipment necessary for carrying it out? Are there adequate checks to insure the maintenance and application of the policy in all situations? If not, satisfactory results can hardly be expected.

**Enforcing the Policies.**—Business men who are having difficulty in getting their policies carried out satisfactorily will often find that the cause lies not in the carelessness of their employees, but in their own negligence. Policies, as it has been emphasized, must be definite, must be presented to those who are responsible for their enforcement in tangible and understandable form, and must thereafter be constantly brought to their attention. Business men are all inclined to forget fundamentals in the midst of the various activities connected with the performance of their duties, and need to be continually reminded of them.

The administrative and executive heads who formulate the policies naturally govern their actions in accordance therewith. The interpretation of the policies may be passed on to department heads and superintendents gathered in meetings and conferences directed by the general manager, where they may be discussed in the light of recent experience. Thus the manager's ideas concerning the execution of the work reach all those who come in direct contact with him and these in turn, through the discussion, gain accurate policy information.

But it is not the president, the manager, or the department heads who establish the attitude of the concern as it appears to the public. The crux of the situation lies with the minor employees—the operators, the clerks, the salesmen—in short, with the great mass of the workers. They are the ones who come into intimate contact with the public and represent the concern to it, yet they are, as a rule, too far removed from the management to receive its direct influence. The executive may dictate the policies, but it is the worker who carries them out.

The big problem, then, is to inculcate in every member of the organization, even to the minor clerks and office boys, the spirit and letter of the policies which the company has bound itself to follow. This requires that each employee thoroughly understand the details of those policies which apply to his own work. Only in this way is it possible for the concern to develop a distinct individuality which will stand out as its distinguishing character. Furthermore, since the flow of influence in the organization is from the top, the interpretation put upon policies by the heads will be reflected among the employees. The executives bear upon their shoulders much of the responsibility for policy education, and from their own understanding must provide the workers with equally complete knowledge of the policies.

A committee advisory to the executive not only affords a body which can advise him regarding the policies, but also provides a group well fitted to spread policy information among the other members of the department. A committee of foremen advisory to the works manager, for example, can aid materially in intelligently putting into effect the major production policy and the policies of the department.

The best means of getting the employees intimately acquainted with the policies is to have the subexecutives and foremen give individual instruction to the workers on the job. This method is particularly valuable in carrying out departmental policies. To prepare the subexecutives and foremen for this task it is advisable to hold meetings in charge of the department head, similar to the executive meetings previously mentioned, where the application of the policies can be discussed and the foremen can get a uniform viewpoint as a basis for their instruction of the workers.

The management will find it helpful to employ other methods of instilling policies into its employees and making sure that these policies will be correctly interpreted. As a foundation for this work a conference of all employees or, in the case of a large corporation, a series of conferences may be held, where the president or the general manager can present the fundamental policies of the business with a straightforward explanation of the reasons for their adoption. This personal explanation, coming from the head of the concern, will carry tremendous

weight with the workers. The most effective method of presentation is to reduce the policy group to a few, clearly expressed fundamentals which can be readily appreciated by the employees and afterwards further interpreted to them by the executives and foremen. The same principle holds true for the workers' manuals, which should contain, among other things, a presentation of the policies. Since a detailed discussion of the policies is not advisable in either case, it should be made clear that any employee can get further information regarding any policy from the executive to whom he is responsible. When the manuals are distributed to the workers, preferably at the conference, the president or the general manager should also emphasize the necessity for consulting the executive in charge of the work before deviating from the policies or instructions given in the manual. This general meeting should be followed by periodic meetings of the workers in the various departments, divisions, shops, etc., where detailed explanation can be given of their part in policy execution and of the exact policies which they are to enforce.

In addition to these methods particularly applied to policy instruction, there are others which may be used in connection with various activities of the business. The educational program offers a field well suited to explanation and interpretation of policies as well as to instruction in other lines. By teaching the employee more about the business and about the external and internal forces which govern its conduct, his mind is naturally made more receptive to the policies themselves. He will better understand the reason for their existence, as well as how they should be interpreted and applied. Enterprising corporations such as the Standard Oil Company, the National Cash Register Company, the Curtis Publishing Company, the National Cloak and Suit Company, and the General Electric Company, have regular corporation schools for the benefit of their employees. Many other concerns have a more limited educational program carried out by means of classes or lectures.

Aside from these regular educational facilities, various publicity mediums for presenting policy ideas to the employees may be utilized. Among these are the company paper and the company bulletin board. The company paper is serviceable provided it is made interesting and readable. It aids in the enforcement

of policies by affording an opportunity for recognizing especially commendable individual instances of policy application. The bulletin board can be made most effective by the use of notices which will attract the attention of the workers and maintain their interest by a series of special announcements concerning any policy being emphasized at that time. These methods assist in the enforcement of those policies which have been selected as vital to the operation of the business, and strengthen the direction and control which they exercise over the organization.

## CHAPTER II

### THE SECOND FUNDAMENTAL OF BUSINESS ORGANIZATION : FUNCTIONALIZATION

The production of goods by machine industry, decreasing as it did costs and prices, and thus stimulating greatly the demand for goods, resulted in a rapid increase in the volume of production. Enterprises grew and multiplied with astounding swiftness, expanding in size and increasing in complexity with every attempt to meet the demand for quantity of production. All efforts were concentrated on securing output, and there was no serious attempt to guide the development of the organization structure. The process was purely evolutionary and opportunistic. The organization split into various unspecialized departments, with an accompanying concentration of managerial duties. With the growth of the buyer's market and the introduction of more scientific methods in production, the subdivision and coordination of functions gradually came into prominence, first as a problem of management, and later as one of organization. Today, this process of logical segregation and combination of functions has reached its highest development in the science of organization, as the fundamental of functionalization.

The principle of functionalization is not new; in the mechanical field, for example, it has long been recognized. No one questions the fact that the function of an automobile is to transport, and that the function of its wheels is to carry the vehicle, of its engine to generate power, of its gears to transmit power, of its shaft to propel, and of its steering apparatus to guide and control. No one would for a moment consider having a separate steering gear or a separate propelling system for each of the four wheels, yet both of these experiments have been tried. The necessity of having the direction and control of the entire vehicle centralized in one position, with separate parts to perform the specialized functions of steering, generating, transmitting, and propelling, was quickly appreciated. In other words, it was recognized



that the greatest efficiency and coordination is secured when each necessary function is assigned to a certain part properly fitted to perform it, with all related functions under one direction and control.

Only within recent years, however, has the value of applying this principle to a business organization been realized. This failure to appreciate the value of specialized functions operating together has been due primarily to the manner in which organization grew up. As the business increased in size there was a mathematical subdivision of work into unspecialized departments, the segregation being made according to individuals and not according to the functions to be performed. All authority and responsibility rested with the head of the enterprise, who acted as the dominating force and coordinated all activities through detailed instructions. When the organization became too large for his personal supervision he was compelled to delegate the control of certain work to subordinates. This subdivision was made with respect to the personal capabilities of each man, without any regard for the nature of his other duties. The result often was the delegation to one individual of unrelated or conflicting duties, or the delegation to two individuals of the same duty. The allocation of new functions was largely a matter of convenience, the duty being assigned to the individual who had time to take care of it, regardless of whether he was the one best fitted for the work, or whether he was in charge of the department within which the function naturally fell. When no reasonable adjustment could be made, the usual procedure was to organize a new department, irrespective of the nature of the work. All this resulted in three evils: first, the multiplication of departments and individuals reporting directly to the general manager, making it impossible for him to supervise all of them adequately and at the same time maintain the broad outlook which is essential to that position; second, the duplication of work because of conflicting authority, with its attendant high costs of operation; and, third, inefficient performance of functions because of illogical distribution and grouping.

The first real effort to improve the situation took the form of personnel analysis. It resulted in the tendency to centralize employment in the hands of one official, who simply became an

expert in picking men. The efficiency of the establishment as a whole and of the various departments, however, did not increase materially. The next remedy tried was job analysis and classification—a type of pseudo-functionalization wherein the requirements of a position were determined, positions of a like character being classified into zones. This was a step forward, but failed temporarily because of misplaced emphasis. The real need was for an analysis of the entire business which would provide a clear idea, first, of the functions of the organization as a whole, and then of the proper activities of its various parts. Only by this preliminary emphasis upon functions and not upon individuals could lasting results be secured.

**Definition.**—Functionalization may be defined as that fundamental of organization which requires that all the proper functions of a business be recognized, granted existence, combined where similar or complementary, and placed under the direction, supervision, and control of properly qualified executives who have only one, or at most but a few, similar functions to perform. The point of greatest importance in the whole concept of functionalization is that each separate function of the business be clearly recognized and definitely assigned to the direction and control of some particular individual who is supposedly fitted to carry on that function. Functionalization, in short, means the analysis, subdivision, and grouping of the logical and necessary units of activity of an organization so as to secure, by decentralized specialization, the greatest results from individual and combined effort. It is the cornerstone of scientific organization.

**The Process of Functionalization.**—Functionalization involves an analysis of the various types of functions which must be performed in any particular business, and the logical grouping of those functions into workable divisions. The process begins with a definite separation of the administrative, executive, and staff functions. Broadly speaking, the administrative functions deal with the legislative and judicial branches of the organization; the executive functions with the enforcement of the legislative and judicial edicts; and the staff functions with the scientific advising of those who must make important decisions. When this differentiation is followed out, it is found that the administrative functions are chiefly concerned with the accomplishment of

the business as a whole; the executive functions with the efficient operation of the various specialized divisions in relation to their position in the organization; while the staff functions have to do with specialized planning and control for the entire organization.

*Administrative.*—The administrative functions include a dynamic study of general economic and trade conditions in their bearing upon the whole business followed by the formulation of policies in the light of these investigations and current information. While the board of directors performs certain general administrative functions, such as the establishment of the purpose or primary functions of the business and the formulation of certain basic major policies, the greatest portion of these duties falls to the president or managing director. He is the one who performs the more detailed administrative functions, and who initiates most of the measures that come before the board of directors. It is his duty to keep the business in balance with the external factors that have a bearing on its operation, by recognizing at all times the position of his concern with respect to the social and economic factors which control it and which are directly bound up with its success.

*Executive.*—The executive functions, through which the administrative edicts are carried out, are concerned primarily with the specialized direction, supervision, and control of the various functional groups, including the functionalization of effort within the group; the provision of equipment, material, and supplies; the development of personnel; the planning of work; the direction of activities; the selection of methods; and the checking of results. They are centralized under the direction and control of the general manager or chief executive, and are performed by the various heads of departments with the aid of their subordinates, to whom these heads have delegated part of the authority which rests with them.

The executive functions are of two types, accessory and operative. The accessory functions, on the one hand, subordinatedly assist in discharging the primary functions; they are not directly connected with the final purpose of the business, but consist of activities which must be carried on in order to make possible the fulfilment of that purpose. Normally they would not be classified as part of the business, since they represent

independent lines of work in which the organization has engaged because of necessity or convenience. The operative functions, on the other hand, are those directly connected with the primary functions of the business and actually put them into effect. In the operative functions a complete outline of the work which must be done under the general headings of production, sales, and facilitation or "general administration," is taken up. A general separation of executive functions is illustrated in the accompanying functional organization chart (Chart I) of a large meat packing corporation. "Construction" and "Transportation" are accessory functions, activities which would not usually be considered as part of the work of meat packing, since the corporation is in neither the construction nor the transportation business. Both of these functions could be turned over to independent concerns without affecting the preparation and sale of meat and by-products, which are the primary functions of the company. "Purchasing," "Selling," and most of the activities falling under the headings of "Operating" and "General Administration" are operative functions. They include all of the various functions which must be performed regularly in the conduct of the business.

The primary reasons for the separation of administrative and executive functions are: to facilitate the dissemination of the general and specialized knowledge which is needed in every business; to secure for administration the same advantages of specialized direction that are found in the specialization of operation; and to make possible the centralization of administration so as to insure coordination in operation. Because of the constant pressure of activities, the specialized knowledge demanded by modern business, and the interdependence of our economic structure, it is very rare if not impossible to find in one individual a broad business outlook combined with detailed specialized knowledge of all executive functions. The administrative functions, therefore, are performed by those who have a general knowledge of economic and trade conditions, while the executive functions are performed by specialists in the various lines of work under the direction and control of the chief executive. Execution is directive and supervisory; administration is creative and constructive; wherefore administration has been recognized as a field of activity that is distinct from ownership or operation,

## FUNCTIONAL ORGANIZATION

## MEAT PACKING CORPORATION

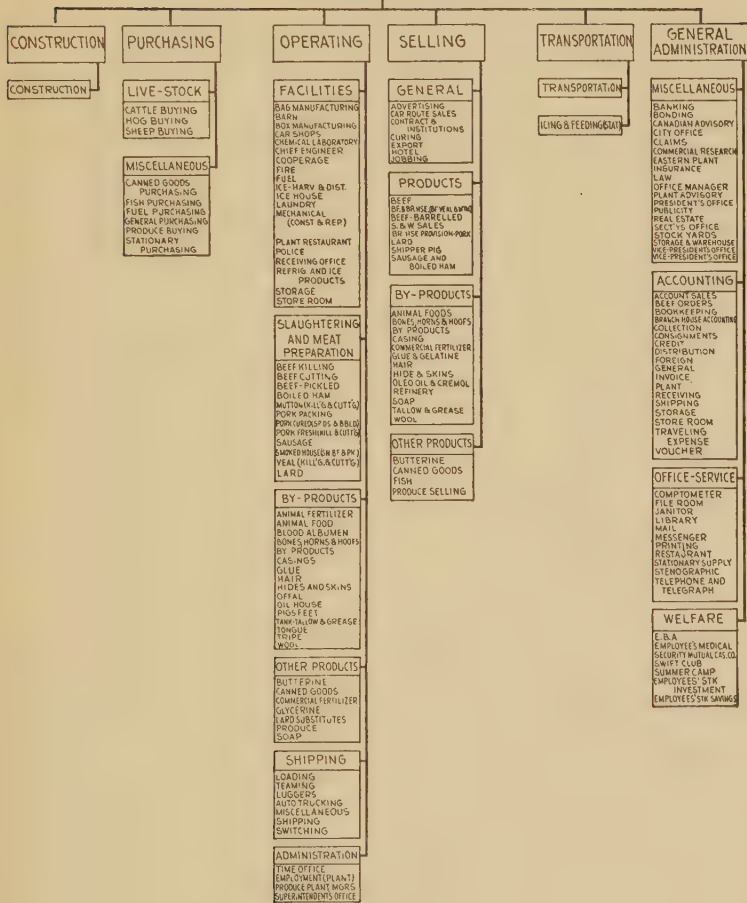


CHART I.



and that requires a special type of training and personality. Centralized administration is necessary in order to weld together the various factors of the organization so that, sharing common aims, they may, with completeness, supplement one another when exerting their powers in combined action.

*Staff.*—The purposes of the staff functions are the coordination and control of the administrative and executive functions. They originate in the necessity for concentrated attention upon certain activities, unhampered by problems of administration or execution. They are advisory activities, and are neither legislative, judicial, nor executive in character. They are concerned primarily with control of legal, fiscal, and public relations; and secondarily, through research and analysis, with control of production, sales, organization, and facilitation.

**Subdivision and Combination of Functions.**—While functionalization must start with a clear understanding of the administrative, executive, and staff functions, it is also essential that this recognition of functions extend throughout the organization. Within each executive division it is necessary to subdivide the work into numerous departments, within these departments into the work of groups, and within these groups into units, even into the definitely established duties of individuals. For example, men or equipment engaged in an operation characteristically different from other operations will be grouped together under a single head. All similar functions and trades will be combined into one department under one control as far as processes and types of activity permit, while within the department a further subdivision will be made according to processes, professions, trades, equipment, and types of labor. Thus, as shown in Chart I, the operating division is made up of six main departments: Facilities, Slaughtering and Meat Preparation, By-products, Other Products, Shipping, and Administration. Within these departments are numerous subdivisions based on the nature of the work. Slaughtering and Meat Preparation, for instance, includes beef killing, beef cutting, beef-pickled, boiled ham, mutton (killing and cutting), pork packing, pork cured (sweet-pickled, dry-salted and barrelled), pork fresh (killing and cutting), sausage, smoke house (smoked beef and pork), veal (killing and cutting) and lard. In this process of subdivi-

sion it is imperative that similar and related functions be placed under the direction, supervision, and control of a properly qualified individual. The number and kinds of functions which can be handled by one man depend upon such considerations as the size of the business, complexity and importance of the functions, and the knowledge and ability required. The fact that the functions are separately recognized enables an apportionment of the authority and responsibility for them according to the qualifications of the existing or available personnel.

Functionalization, then, includes two distinct ideas: (1) the analysis or separation of the business into its various functions; and (2) the grouping or arrangement of those functions according to type, with a combination into departments of those which are complementary, so that each department will contain all the factors necessary for the performance of its particular duty. No matter how complicated the functions may be, those which are similar or complementary must be under one person. He may subdivide as he finds necessary, but the control of all the related functions must be in his hands if complete coordination and control are to be secured.

**Danger of Confusing Functions with Personnel.**—Many executives err in confusing the functions performed by the organization with the persons who perform these functions. It is a common occurrence to find the general manager trying to solve problems concerned with the various functions of his enterprise by means of a chart which represents little more than an orderly grouping of the members of the organization. He fails to distinguish between the two separate problems: the one, functionalization, a problem of organization; the other, placing the man, a problem of management. The functions of the business, the activities necessary for its operation, exist regardless of the personnel available to perform them. The great value in recognizing and segregating these functions is that it brings out the necessity of providing men to fit each one. In an analysis of the organization, the fact that John Jones is tending Machine No. A53 is not of outstanding importance to the manager. What he must know is that the function of operating Machine No. A53 exists, that it should, with similar functions, be placed under the direction, supervision, and control of some head, the shop

superintendent, for example, and that definite provision must be made for its performance. The question of deciding who is qualified for the position is not one of organization, but of management. The idea is first to determine the functions of the business, and then to find men who can fit them.

**Functionalization as a Principle.**—Functionalization, moreover, does not imply the use of any one definitely standardized plan in dividing the work of the concern. It means the application of certain general *principles* which have been found adaptable to all businesses. The division, grouping, and assignment of functions, then, will be made in the way which is found most logical and practical, considering the particular characteristics of the organization being functionalized. The principles of functionalization are constant—their application varies with the nature of the business concerned.

**Why It Is Necessary to Functionalize the Business Organization.**—The present emphasis on functionalization has come in response to clearly defined needs. Large-scale production, necessitating the delegation of authority and responsibility, can be based only on a scientific distribution of work. Division of labor, with its attendant requirements of adequate instruction and supervision, produces maximum results only when made according to functions. Furthermore, the apparently conflicting efforts to secure permanency and stability as well as flexibility in the organization are harmonized and fulfilled by functionalization. This, then, is the fundamental which contributes materially to the effective operation of all the others, and facilitates the construction of a well-balanced, coordinated organization.

**To Facilitate Large-scale Organization.**—The size of the modern business unit and the number and complexity of its activities make it impossible for one man to control all or even an appreciable part of the functions performed. It has become necessary to divide the work in order to get individual concentration upon each particular part. This separation of activity, however, cannot be made arbitrarily. The most logical division will be secured by first dividing the organization into all its functions, then grouping those which are similar or complementary under heads capable of directing and controlling the work.

This assures the presence in every department of all the factors necessary to carry on complete operation, and at the same time simplifies departmental organization. This procedure of conscious segregation and combination avoids the dangers of evolutionary division, which so often results in duplication of effort and in too great concentration upon one line of endeavor.

The division of activity in large-scale business necessitates the delegation of authority to direct and control definite work. This delegation should naturally be determined by the logical units of activity in order that there shall be placed in each department all the factors essential to the performance of its work. Where authority and responsibility are not delegated in accordance with definite functions, the inevitable results are discord between executives, work at cross-purposes, and arbitrary shifting of responsibility. Proper functionalization prevents all this by closely defining the duties of each part of the organization. In other words, the executive in charge of certain functions, whether of a major or of a minor subdivision, is in full control of his own field, has authority to direct its operation, and is responsible to a definite superior for results. This automatically makes cooperation possible, and prevents the neglect that arises from indefinite placement of responsibility. Similarly, under these conditions, the worker cannot find an excuse for carelessness or faulty performance on the ground that he was not instructed to do certain work. Each man will know to whom he is responsible, and for what he is responsible, and will be unable to evade his obligations.

**To Get Maximum Results from Division of Labor.**—Functionalization, furthermore, is undoubtedly the greatest factor in getting maximum results from division of labor. From the standpoint of the organization analyst, its advantages fall into two classes: those derived from specialization of effort; and those accompanying specialization of task. Specialization of effort refers to the concentration of one individual upon a particular function or group of related functions, while specialization of task refers to the reduction of the scope of the work performed so that it embraces only a small stage of the entire process, usually the continued performance of a few related motions.

*Specialization of Effort.*—Realization of the advantages of specialization of effort has resulted in the recognition of such



functions as accounting, finance, selling, production, standardization, planning, routing, scheduling, purchasing, research, facilitation, etc., as distinct fields for specialized control. The greatest economy effected by this division of work is the concentration of specialized knowledge in administrative and executive positions. This develops within the organization a corps of experts, each of whom gradually becomes more proficient in directing and controlling the functions in his limited field; and, at the same time, provides a group of specialized executives who can act as an advisory staff to those in charge of the business. Continued experience along one line builds up for the specialist a store of knowledge which can be interpreted and applied directly to the solution of the special problems connected with his work. This source of information is lost to the man who directs and controls so many different functions that the difficulty involved in analyzing and drawing conclusions from his diversified experience outweighs the benefit derived. Only by the specialization of effort, on one or a limited number of functions, will sufficient knowledge be accumulated for the efficient performance of these functions, or trained specialists be developed who can provide competent counsel for the administration.

Specialization of effort according to function is of great assistance in solving personnel problems. The definite recognition of each function facilitates the determination of its specific requirements, in this way making possible the correlation of the abilities of the worker with these requirements. Specialization of effort makes it possible to put the right man in the right place and to pay him in proportion to his efficiency—all this because the segregation of the functions has definitely outlined the ability required to fill any one position. Where there is no specialization of effort it is frequently impossible to find a man capable of caring for the numerous scattered functions placed in his charge. When the effort of an individual is concentrated on one or a few related functions, however, the problem of finding and training a man to fill the position becomes less difficult. The modern functionalized line organization makes it possible fully to train men in a comparatively short time, and this without losing simplicity, discipline, and coordinated work under one individual.

*Specialization of Task.*—Specialization of task refers to narrow-



ing the scope of the work performed so that it embraces only a small stage of the entire process. This form of specialization is advantageous in that it makes possible such measures as standardization of work, time and motion study, and the establishment of accurate standards. It enables better measurement of performance, and reduces the knowledge and ability required, thus giving less intelligent and less skilled workers the opportunity to perform tasks which formerly demanded a much higher grade of labor. The principal advantage of task specialization, however, is that it leads to the substitution of machinery for manual labor by narrowing the operation down to a few repetitive motions. By this change, too, more economical performance of the function is gained.

Although each task in itself is usually too small to be considered as even a minor function, functionalization is primarily concerned with the controlling or governing conditions which enter into each of these tasks. As has been seen, task specialization encourages the making of time and motion studies, the adoption of standardized methods, the setting of standards, the provision of instructions for the worker, the keeping of accurate cost records, and similar activities which affect each of the small task divisions. These functions, which really constitute the separation of planning from doing, are rightly deserving of the attention of experts, who can perform all the necessary mental effort, leaving the worker free to concentrate on the task before him.

**To Make Possible the Issuance of Definite Written Instructions.**—The specialization of effort and task according to functions provides the factors necessary for the issuance of definite written instructions. Task specialization, resulting as it does in the standardization of work and the determination of an established sequence of operations which constitutes "the one best way," fixes, almost automatically, the particular requirements of each function and the exact procedure to be followed in its performance. It thus provides all the information essential to the formulation of comprehensive and detailed instructions. Specialization of effort, by developing highly trained specialists possessing expert knowledge of each function, furnishes a group of men fitted to reduce this information to accurate written form,

thereby producing instructions which will be easily understood by the workers and through which their work will be directed along uniform lines. These conditions will not be fulfilled in an organization which has not made a functional division of work, for two reasons. In the first place, where there is no definite recognition of specialized types of work, or of specialized tasks, the confusion of activity will make it impossible either to determine the particular requirements of each separate function or to discover the best method for its consistent performance. In the second place, where a man is directing a number of different and perhaps unrelated types of work, he will be unable to give to any one of them the special attention which would give him the knowledge requisite to the formulation of detailed written instructions. Specialization of effort and task according to functions, then, is prerequisite to the issuance of definite and comprehensive instructions.

**To Provide a Basis for the Establishment of Standards of Performance.**—The establishment of standards of performance, the measure of efficiency within the concern, follows closely upon functionalization. The standard, being a scientifically determined level of accomplishment which should be reached in any particular activity, depends upon the segregation and delimitation of that activity and upon the development of standard practices for its performance, so that it will be possible to fix with accuracy the degree of efficiency to be expected. Since it can apply to only one type of work, a standard will also apply only to that division of the business, such as a department, subdepartment, or group, which is handling that work. This division, consequently, must be clearly defined and its activity independently analyzed. Functionalization makes a logical separation of the activities of the organization into definite divisions for which standards of performance can be formulated.

**To Maintain Stability and Balance in the Organization.**—Functionalization contributes probably more than any other one fundamental to the permanency and stability of the organization. By recognizing in the primary functions the purpose of the business, it makes immediately apparent any deviation from that fixed purpose. By determining in the accessory and operative functions all the proper activities of the organization,

it obviates the possibility of neglecting any part of the work. The fact that all the departments and subdepartments are clearly distinguished and placed under the direction and control of a capable head insures adequate care and attention for each.

Furthermore, since there are experts in charge of each activity, the maintenance of balance within the organization is assured. Balance means that coordination of parts which results in the most efficient operation with the least strain. To preserve this condition, it is essential that no part be over- or underemphasized, and that no part be slighted because of stress upon another. The general manager, however, is often chiefly interested in some one department, which he makes his specialty, and to which he devotes particular attention, perhaps neglecting other activities in consequence. Without a counteracting influence, such overemphasis upon a certain division would throw the business out of balance. Functionalization offsets this tendency, since it places the direction and control of each function in the hands of specialists, more competent than the general manager to handle the details of operation. In this way it secures the equal representation of each activity in the competent counsel with which these specialists provide the president and the general manager. There is little danger that any will be neglected, since it is to the interest of each executive to emphasize his own division.

Again, the division of authority and responsibility attendant upon functionalization, by definitely limiting the scope of the direction and control of each executive, prevents any one individual from assuming unwarranted powers and trying to run the entire concern. A forceful and dominating executive might otherwise upset the balance of the organization in an attempt to regulate the operation of every other department to suit that of his own. Where each division is definitely established and placed under a capable head, this is not possible.

Even when these conditions have been complied with, and balance has once been established in the business, constant vigilance is required for its maintenance. Especially in large-scale production, where division of labor is carried to such an extent and where the number of employees is so great, there must be some means of insuring the proper attention to every part of the

work at all times. Comprehensive and continued supervision is essential. This supervision may be exercised over either of two factors—men or functions. While the individuals who make up the organization, however, are constantly changing with more or less rapidity, the functions of the concern usually remain the same until some radical change in the conduct of the business causes the addition or elimination of activities. Functions, then, definitely recognized and segregated, afford a stable foundation upon which to base the supervision of the organization. As long as every part of the work is performed by someone, the fluctuation of the personnel will have little disturbing effect upon the balance of the business.

**To Give Flexibility to the Organization Structure.**—Although stability of function is the main factor in preserving the balance of the concern, this does not mean that it creates an absolutely rigid organization structure. The condition of balance is not stationary, but demands a shifting of stress on the different activities in accordance with changing conditions both within and without the organization. There must be not only fundamental permanency and stability in the organization, but also sufficient flexibility to allow for this variation in emphasis. Functionalization will give this requisite flexibility by providing in the functions definite workable divisions which can be shifted, without confusion, to secure the particular emphasis demanded to preserve balance under varying circumstances.

This power of shifting functions without difficulty also makes it possible to utilize to best advantage the knowledge and ability already existing within the organization. Every function of the business must be performed in order to maintain continued operation. Yet each function requires a special type of knowledge and ability for its performance, and when conditions change it is not always possible to secure additional men who have the necessary qualifications for effectively stressing the particular function upon which emphasis is desired. In this case, the functions will be shifted so that the specialist already in charge of that function is left free to devote his entire time to it. Any other work over which he has direction and control will be transferred to a different head. If, for instance, the financial manager is also in charge of accounting, when conditions make it essential to



place particular emphasis upon finance he will be relieved of the care of accounting in order that his whole attention can be directed toward the solution of the financial problems of the business. Thus the executive in charge of several functions is not simply instructed to stress one in particular, but is actually released from responsibility for those which, for the time being, are of less importance. These latter functions, however, suffer no neglect as a result, since adequate provision for their direction and control has been made. By this rearrangement of activities, the knowledge and ability existing within the organization are adapted to new and varying conditions with the minimum amount of disturbance in the operation of the business. Flexibility without loss of balance, then, is the direct result of functionalization.

The case of S. F. Bowser and Company, Inc., provides an interesting example of how this flexibility may be secured by shifting the functions of the business. S. B. Bechtel, the president, states that an organization is a collection of individuals grouped to get results of a certain kind *under a given set of conditions*. A change in these conditions, consequently, makes necessary an alteration of the organization. In his own concern, for example, the assistant general manager was at one time handling two functions, marketing and finance. When after the war circumstances made it desirable to stress sales, he was relieved of the function of finance so that he could concentrate his attention on marketing. Likewise, when emphasis was being placed on the reduction of costs, the supervision of stores and purchasing was shifted from the head of the production department to the secretary, whose conservative inclination and experience fitted him for the kind of control which was desired. According to Mr. Bechtel, these changes were based on the general principle that the functions of the organization must be shifted under different conditions to fit the men available and to secure the desired stress on any activity. From his experience, he concludes that the true logic in delegating authority in the organization is a matter of placing men with regard to abstract functions and with regard to the special importance of these functions at the particular time. While this is rather an extreme case, it nevertheless illustrates the point that division by functions enables a shifting of the work to meet new and changing conditions,



using the knowledge and ability already existing within the organization.

When, however, a recognized function is shifted, the authority and responsibility for its performance must go with it. The fact that it may receive less attention for a time, due to the altered conditions, does not lessen the necessity for centering the means for its effective direction, supervision, and control in the hands of the individual to whom it has been shifted. Otherwise the whole advantage of the transfer will be lost in the resulting confusion of authority and responsibility, and the consequent lack of balance.

**To Make for a Growing Organization.**—Functionalization, in addition to enhancing both the stability and flexibility of the business, makes for a growing organization. Too often a concern is built up and held together by one man, who by extraordinary ability and effort directs and controls all of its various complex activities without the assistance of specialists in any line. Consequently, when the firm loses this head, there is no one left who has been trained to bear authority and responsibility and who possesses the specialized knowledge necessary to fit him for the position; nor is there any competent counsel to advise the new manager. Disintegration is the inevitable result. But if the functions of the business are definitely established, a permanent foundation and framework are provided. The division of activity prevents any one man from becoming absolutely indispensable to the organization. The duties of all the various positions are known, specialists are developed who have intimate knowledge of the work involved in each, and understudies can be easily trained to fill the place of any individual who drops out. This prevents the curtailment of the activities of the business by too great dependence upon one person, whose loss would seriously hinder continued operation, and whose own personal ability is the limit of the expansion of the concern. Where the business is functionalized, it is directed and controlled in terms of the functions which it performs and not in terms of individuals.

**Functionalizing a Business Organization.**—The actual functionalization of the business often encounters an obstacle in the opposition of administrative and executive officers. They view

with apprehension the magnitude of the possible changes and the problems which may arise, citing in condemnation of the process the failures which have resulted from various attempts to install "efficiency" systems. These failures are for the most part the work of inexperienced "industrial engineers," who have blindly worshiped their "systems" and separated functions arbitrarily, regardless of such factors as personnel, the evolutionary development of departmental duties, the peculiar characteristics inherent in the organization, or the divisional emphasis necessitated by the type of business. Obviously, no system of functionalization can be applied indiscriminately to every business. Even the process of functionalization will differ according to the size of the organization and the complexity of its operation. The task is not to establish a definite plan or standard according to which the functional segregation of work can be made, but to outline a principle of division of activity which will be suitable for universal application. This principle consists merely of the complete recognition of all the proper activities of a business, and the combination of those which are similar and complementary into divisions, departments, groups, etc., each of which is easily within the scope of the knowledge, training, and capacity of an individual.

**Steps in Functionalization.**—While the multitude of business types and the varying character of their functions make it impossible to apply universally any rigid method in functionalizing a business, in each case there are three steps which will be found logical and practical. These are: first, the analysis of the organization as it is operating at the time the study is started; second, the development and construction of the basic functional organization; and, third, the construction of the actual organization which is to be put into operation. The first step comprises a study of the business as a whole, as well as of all its parts, with regard to the functions which they are performing and those which they should be performing in order to fulfil the purpose which is the reason for the existence of these functions. The purpose of a function is the fundamental determinant of its right to be performed in any part of the business. The second step consists of the scientific grouping of the similar and complementary functions of the business into divisions and departments without

consideration of available personnel, organization inertia, or other influencing factors, but with the idea of securing a basically sound structure upon which the final organization can be built. The third step is the construction of the final organization, which will be a compromise between an absolutely scientific division of functions and the division which gives full weight to the limiting factors that must be taken into consideration in making a final division of functions and assignment of authority.

**The Primary Functions.**—It is useless, however, to make any analysis before the real aim, the real reason for the existence of the business as a whole, has been clearly established. This aim will be embodied in the primary functions, in which the kind of service that is to be rendered and the class of people to whom it is to be rendered are the important items. For instance, it was stated by George L. Bell, in the preliminary report on the reorganization of a large western light and power corporation, that:

The business of the corporation is the adequate and courteous furnishing of power to the public in return for a fair charge therefor. The primary functions of the business are:

1. The production of power.
2. The distribution of power.
3. The service to consumers.

These functions are the basic determining factors in the work of segregating and combining the activities of the business.

**The Preliminary Analysis.**—The initial step in functionalization, as previously stated, comprises a complete analysis of the organization as it is operating at the time the preliminary work is started. Casual scrutiny of the business is insufficient for the detection of all its necessary functions and their relationships. These are brought to light only by a careful study of the activities in which the organization is engaged at the time of the analysis, to determine whether these activities include all those which the company should be performing in order to render that service which is the foundation of its existence, or whether they embody any which are not essential for that purpose. The conduct of this introductory survey not only acquaints those who are making the study with all the intricate functions of the business,

but also brings out the historical development of the organization, an understanding of which is necessary for the determination of the inertia and the momentum of the organization, both of which must be given consideration in reorganizing the structure of the concern. It also furnishes a knowledge of the available personnel, which is extremely important in making the final division of duties, provides a definite basis for the combination of functions, and continually discloses maladjustments which may necessitate the rearrangement of those functions.

The preliminary analysis of the organization will consist of the determination, by individual studies, of the purpose and attendant functions of its: (1) board of directors and directors' executive committee; (2) president or managing director; (3) general manager or chief executive; (4) various executive departments; and (5) staff, both individual and collective. The study should be started by drawing up a rough organization chart showing departments, personnel, and lines of authority existing in the organization at the time the study is started. This work not only will acquaint the engineer with the personnel of the organization, serving, in a sense, as his introduction, but also will give him a general view of the various phases of the problem before him. It requires very little effort, but serves an important purpose. At this time, it is also advisable to ascertain the reasons for the original establishment or the development of the present divisions of work. Chart II shows the preliminary draft of the organization of the light and power company previously mentioned.

Although it is usually found most satisfactory to start the preliminary analysis with a study of the various executive functions, and to follow this by an analysis of the administrative, chief executive, and staff functions, this discussion, for the sake of uniformity and simplicity, will observe the order of the customary lines of control within the business organization.

**Functions of the Board of Directors.**—The functions of the board of directors and its executive committee will vary somewhat according to the type of business. The analyst, however, is chiefly concerned with those which are common to boards of directors in any organization. These include the interpretation of the will of the stockholders as to the general nature of the busi-







ness, the special type of service which it is to render, and the general attitude which it is to take toward its market and the public. The board of directors is further responsible for the general administrative direction of the business, but not for the direction, supervision, and control of the executive functions. It also has charge of the formulation of those basic policies of a non-technical character which affect the whole organization; the selection of those who are to have control of the business; and the review of the results they achieve. The analyst at the time of this first study is usually interested only in determining whether or not the board of directors and the executive committee have definitely established the policies which come under their control, and whether or not they have, with the aid of their matured experience, served as an economic council to the president and the general manager, without interfering with responsible management themselves by performing the duties of the latter officials.

The most satisfactory source of information concerning these facts will usually be the minutes of the board of directors, providing that this record is complete. In many cases, however, the minutes do not give full information concerning the action taken by the board in all matters, but are limited to proceedings of extreme importance which are characteristically part of its functions. If the complete record is available, it will ordinarily show that the board of directors has assumed control of certain operating activities which should be in the hands of the president or the general manager, and that operating heads are going directly to it for an expression of opinion in matters of importance. Such a condition is invariably accompanied by disorganized management. The general manager or chief executive is unable to coordinate operation, since control of only part of the activities is in his hands. If this tendency of the board of directors to take an active part in executive direction and control cannot be eliminated, the full value of the reorganization can never be attained.

**Functions of the President and the General Manager.**—In analyzing the functions of the responsible heads of the business, the president or managing director, and the general manager or chief executive, the analyst realizes that it is impossible for one

individual to assume satisfactorily the entire task of direction and control of the organization. This task is twofold. It requires, on the one hand, constant observation of economic and trade conditions in order to keep the business in tune with the external factors which have a bearing on its operation, and the facing of problems outside the business which are directly related to its success. It requires, on the other hand, the selection and coordination of all the various factors entering into the internal operation of the business, and their direction, supervision, and control in such a manner as to secure maximum results. While both phases of the task are in a sense closely related, the great diversity of the problems to be solved in each case, requiring different types of intellect, temperament, and training, necessitates the attention of two individuals. In ordinary practice, the president is in charge of the external relationships, while the general manager controls internal relationships.

*The President.*—The functions of the president must be considered with respect to the fact that he is the direct representative of the owners and the board of directors and is the administrative head of the business. He is, as sometimes designated, the managing director of the concern. He looks after the proper execution of the edicts of the board of directors, represents the company in all public relationships, formulates and interprets—in conjunction with the general manager and his department heads—the major policies, furnishing general information on outside conditions while the others provide the necessary technical knowledge; and keeps the organization in balance with general business and trade conditions by recognizing at all times the position of his concern in relation to the social and economic factors which control it. His value to the organization depends upon his ability to free himself from detail and to maintain that broad perspective which enables him to act as an advisor to the board of directors and to correlate sagaciously social, economic, and technical ideas into major policies. In some cases, however, he is forced to act as the scientific buffer between the demands of the board of directors, on the one hand, and the actual necessities of operation, on the other.

*The General Manager.*—The functions of the general manager are concerned with the coordination, direction, and control of

the internal factors of the business.<sup>1</sup> There seems to be a natural tendency for every organism to jar apart and become a loose-jointed aggregation of unrelated units unless there is some binding, supervising, and coordinating force that continually keeps them in place and makes each unit realize that it is not complete in itself, but merely a part whose greatest service is rendered when it fits perfectly into the whole. To supply this force is the chief function of the general manager of the business. He determines the structure of the organization, he selects the methods to be used during his control, and the executives to be placed in charge of the functional groups. He is the leader, the dynamic factor which keeps the organization moving toward a definite goal, securing efficiency through his capacity to select and balance men and methods. He acts as the balance wheel of the concern, seeing that each factor is given its due weight and attention and that it correlates with all other factors. He takes an active part in detailed management only when a pronounced weakness in some department demands his close attention during reconstruction. By this timely concentration upon weak points he builds a smoothly running structure in which every division meets every other division and none are over- or underloaded. In considering the functions of the general manager, the analyst wants to know whether or not he is performing all those mentioned above, and, at the same time, is keeping the operating functions coordinated with the external controls as outlined by the president of the concern.

**Analysis of the Executive Functions**—In the analysis of the various executive functions, the analyst is confronted with his most detailed problem. He not only must determine all the executive functions and segregate the accessory from the operative functions, but also must analyze them with respect to the results which they are getting under present conditions in comparison with those which they should be getting. This last task is not simply a matter of segregating and combining all logical activities into groups. It includes the whole scheme of inter-departmental relationships, which must take into consideration

<sup>1</sup> Where the functions of the president and the general manager are performed by one individual, there is a marked tendency to neglect the external factors affecting the business.

not only the possibility of securing coordinated individual action, but also the possibility of enabling the general manager to perform his functions effectively.

*Overcentralization.*—One of the problems most frequently encountered at this point is the overcentralization of execution. This is found wherever a large number of departments report directly to the general manager, irrespective of the character and importance of their work. It is the natural result of the evolutionary development of an organization, where new departments are created by dividing old departments when the increasing complexity of the work makes the burden too heavy for one executive. Under these circumstances, the general manager invariably becomes so involved in detail, through the written and personal reports of his subordinates, that he loses sight of the equilibrium and purpose of the organization as a whole and becomes an operating executive making minor decisions that should be left to his subordinates and intimately directing the detailed operation of troublesome departments. An organization of this type is soon operating without a coordinating and balancing head. Chart II (p. 54) of the light and power corporation previously mentioned is an illustration of this condition. In this organization, there were fifteen departments reporting directly to the general manager, together with thirteen district managers also under his direct supervision. The manager became a judge, the number and complexity of whose decisions were limited only by his time.

*Overspecialization.*—A problem somewhat similar to the preceding has been brought about by the present tendency toward overspecialization. This tendency has grown out of the attempt of many managers to put "brains" into the organization without considering the interdependence of activities. They have consequently subdivided their organizations into numerous departments, each in charge of a specialist under their direct supervision. These specialists are usually independent in action and final in decision, being responsible only to the general manager for results and taking little interest in the operation of other departments. The fact that even the relatively unimportant divisions are directed by experts leads each department to exaggerate its own importance, and places a premium on departmental



loyalty and exclusiveness. The general manager, in consequence, is confronted with the tremendous task of coordinating the detailed control of all the various departments in order that his high-class machine may not fall to pieces from its own weight. Overspecialized brains are too often individualistic. Their self-satisfaction breeds departmental conceit and organization discord.

*Functional Maladjustment.*—There is still another problem to be faced by the analyst in his study of the executive functions—that of functional maladjustment. In the average business, for example, it is the usual thing to find that some functions which are obsolete and should be eliminated are still being performed, while important functions have been lost sight of or are inadequately provided for in the confusion of operation; that some are unnecessarily duplicated, while others are split up among departments and are being irregularly or half-heartedly performed; that certain functions are indefinitely placed or illogically assigned; and that emphasis is being laid upon functions of minor importance to the neglect of those which really require constant attention.

*Departmentalism.*—The study of the executive functions must reveal the causes as well as the existence of these maladjustments. The trouble lies, in many cases, in departmental jealousy which is a natural accompaniment of the too common practice of judging results by an elaborate system of internal checks and balances, which rewards individual rather than collective accomplishment. Within each department, consequently, the executives functioning under such a system have fought for maximum control and managerial favor in an endeavor to gain prominence for their own divisions. This attempt has been stimulated by the frequent tendency of even the general manager to attach more importance to the success of individual departments than to the efficiency of the concern as a whole. At the same time, these executives have concentrated their attention on keeping their methods of operation more secret and their accomplishments more individual in order to give less grounds for criticism and to create an appearance of self-sufficiency. Departmental individualism is invariably fostered by all those systems of control which emphasize negative rather than positive results. Systems of this type inevitably lead to the opposition of one



department to another, with all the attendant evils of interorganization conflict and maladjustment of functions.

During the preliminary study, this departmentalism must be broken down, friction between departments ironed out, and the support of every executive, even of those in the most minor positions, enlisted in the task of readjustment. Only when there is a healthy spirit of cooperation can all the facts necessary for the completion of the survey be obtained. When each executive is made to realize that all the functions of the organization are interdependent, that all effort must be directed toward the benefit of the whole concern rather than of any one department, and that his greatest value lies in properly fitting into his particular niche in the organization structure, there will be little difficulty in effecting the necessary changes.

**Preliminary Arrangement of the Executive Functions.**—In making this analysis, after the accessory and operative functions have been separated the most satisfactory procedure is first to group roughly those departments which ordinarily are combined into functional divisions, and then to make a study of each division as a unit, with the idea of determining the functions that are being performed, and discovering any maladjustments that may exist. The operative functions, for example, can often be conveniently divided into the three main divisions of production, distribution, and facilitation (commonly called general administration), with what are considered to be the logical subdivisions within these groups. This segregation and study of activities according to functions, regardless of where they are being performed, is by far the most satisfactory method of revealing maladjustments and suggesting possible solutions.

The divisional study is not a superficial survey; on the contrary, it consists of a detailed and comprehensive analysis of every function included in each division, even to the functions of individuals. In a large concern, consequently, it will usually require the assistance of specialists working under the direction of the analyst who is making the investigation. This is notably true in the accounting, sales, engineering, and personnel group. The time needed to get all the necessary information will depend upon the size and character of the business. The study of the departments of a large manufacturing and selling corporation, for

example, would probably require months of detailed application.

**Analysis of the Staff Functions.**—In analyzing the staff functions, the investigator is always careful to differentiate between those which are concerned with specialized control and those which belong to the system of checks, since the latter become superfluous when the organization is functionalized. These functions of inspection are critical in nature: they consist of detecting any mistakes, inefficiencies, or failures to perform work, and reporting them back to the general manager. Where the general manager has the immediate direction of all departments, but lacks specialized knowledge in the various fields, it is necessary for him to have a "staff" which will keep him informed as to whether or not his orders are being carried out. In the functionalized business, however, where the manager receives the reports of only a limited number of major executives, each a specialist in the work of his own division and in close contact with it through his subexecutives, the necessity for this system of internal checks is obviated. The staff has fallen into disrepute in the eyes of many managers simply because they insisted upon designating the specialists who performed the "detective" functions as staff officials. These men were occupied, not with the proper staff functions of control, but with continual inspection of the work of executives; they did not offer constructive criticism, but immediately reported any inefficiency back to the general manager. This system naturally resulted in friction between executives and staff officials and led the manager to conclude that the staff was a hindrance to his business. For this reason, the investigator must be particularly careful in segregating any "detective" functions which are being performed in the concern, in order that, in the subsequent rearrangement of the organization structure, they may not be confused with the proper staff functions of coordination and specialized control.

These functions, which the staff should be performing, are concerned with the large problems of legal, fiscal, and public relations control, and with the research and analysis which will assist in the control of production, sales, organization, and facilitation, this in addition to the functions which it performs in serving as the "eye" of the general manager, keeping him

constantly posted on such matters as costs, the comparative progress of work in the various departments, and the extent to which it has been possible to follow the established plan of operation. In their capacity as advisors and coordinators, the staff officials are of vital importance to the organization. The various executives of the business constantly require unbiased information either concerning the work of their departments or concerning factors and conditions outside their own divisions. There are few problems which are purely intradepartmental—each affects more than one part of the business.

It is the function of the staff officials to bring to light these seemingly individual problems which, if not given due consideration, will of their own weight soon throw the organization out of balance. If, for example, the production department has failed to attain the desired quality because unsatisfactory processes have been employed, the matter is also of importance to the sales department which must dispose of the product. Furthermore, the type of information required to remedy the situation can often be secured only by research and analysis which neither the chief executive nor the department heads have time to undertake. It is in such cases that the staff members perform their valuable service of supplying the needed information and advice. It is the duty of the staff, not to execute the actual work in accordance with their findings, but to assist the executives by giving recommendations which will facilitate and coordinate the activities of all departments.

The size of the staff required to execute these functions is dependent upon the size and type of the business. It may consist of only one man or of a number of men. In the smaller organization its functions may even be performed by various members of the concern who are in charge of line operation, but who have been asked to assist the general manager in performing one or more of the foregoing staff functions. In the larger concern, however, there are usually certain activities which are characteristically staff functions and which cannot be effectively performed except by individuals who can devote to them their entire time. There are also certain other staff functions of a broader character which can be most satisfactorily performed by committees; such, for example, as when the subexecutives act as

a staff to their common superior, who is a specialist in his field, and when the major executives serve as a staff to the general manager. This is especially true where there are departments in the organization which specialize in such matters as costs, standards, engineering, and commercial research.

**The Development and Construction of the Basic Functional Organization.**—Upon completion of the preliminary survey, when the necessary information concerning all the functions has been collected, the next step is the development and construction of the basic functional organization for the concern being analyzed. Here are involved the recognition, separation, and classification of all the proper functions of the organization into groups according to character and relationship. The process is one of cold scientific analysis, in which studies are made of all the activities being performed, in order to determine their functional character and functional relationship. Its purpose is to insure that every activity which is a necessary part of the business is properly provided for and scientifically grouped, that no unnecessary duplication of functions exists, and that all obsolete functions are eliminated. It comprises the first actual segregation of functions, and furnishes the foundation upon which the basic functional organization is to be built. The allocation of functions at this time is made irrespective of available personnel, organization inertia, business conditions, or other limiting factors. This eliminates the danger that those making the analysis will be so influenced by these variables that they will be unable to construct a basically sound structure. When this classification has been completed, it is advisable to present the results on a chart, for purposes of comparison and ready reference. Chart I (p. 39) to a certain extent, illustrates such a presentation, which merely classifies the principal functions to be performed without any reference to methods or to the individuals directing and controlling them.

**The Construction of the Actual Organization.**—With this segregation and classification as a foundation, the actual organization structure to be used in operation is developed. From the mass of detailed information concerning operations within the business and the outside factors influencing it, there will be selected those functional groups which are of such importance or



character as to require direct relations with the general manager. These groups will later constitute the major departments. This preliminary blocking out of the final plan is done by the analyst before he becomes so involved in detail as to lose that proper sense of proportion so necessary to organization analysis. The number of such departments under the immediate direction and control of the chief executive will depend upon the size and character of the business.

In a large organization, this number should run between three and six,<sup>1</sup> while in a small business the manager may have eight or ten executives reporting to him on varying matters. In a large manufacturing and selling concern, for example, there may be only three departments reporting directly to the general manager, the division being made into the three main groupings of the operative functions previously suggested—production, distribution and facilitation. Performance of accessory functions, such as construction and plant preparation, if they are not being handled by outside contract, would require the addition of a fourth. In the average business, however, it is usually necessary to increase this number, either because of the peculiar conditions of operation or because of the nature of the service which the concern is rendering to its public, where certain departments require the immediate attention of the general manager due to their importance in operation or the dependence of major departments upon them.

The subdivision of these major departments is of equal importance with their initial establishment. The major executive in charge of each department must have not only time to extend his expert directive ability over his whole department, but also time to concentrate upon its weak points. This cannot be done unless provision is made for his delegation of detailed routine control and supervision. There should consequently be very few executives reporting immediately to the major executive; likewise a very limited number of individuals reporting to the executives under him. This gradual stepping down of functions and authority, in opposition to drastic specialization, should characterize the entire process of departmental subdivi-

<sup>1</sup> The number may be increased in case certain staff departments, such as legal, research, engineering, etc., report directly to the general manager.



sion of non-routine activity. This type of division not only makes planning more complete and facilitates supervision, but also eliminates the danger of the overspecialization of executives, where their ambition is killed by limiting their field of operation and scope of authority to such a degree that they are unable to give expression to their own initiative and ability or to get the experience necessary to prepare them for higher positions.

Specialization, however, becomes more necessary and more pronounced in the division of those functions of a routine and automatic character, which require less planning and supervision. One head can consequently direct and control a greater number of them, provided identical routine functions are divided into groups, and each group placed under a responsible boss. The extent to which this process of subdivision can go in any department before the point of diminishing returns is reached depends, in a large measure, upon the degree of standardization and the amount and type of planning and supervision required in the various classes of work that the department is performing, and upon the location of the workers over whom supervision must be exercised. In the average concern, it could profitably be carried much farther than is the usual practice, until over every seven or ten workers there is a boss, with perhaps eight or ten of these bosses reporting directly to the same subexecutive. While this materially increases labor overhead, in a majority of cases it also decreases costs through the greater operating efficiency which is gained through more careful planning of the work and closer direction and supervision of its execution.

In making the departmental division of activities, a number of other points are to be considered. Division of work must be made so that lines of cooperation will function freely. This requires not only that the services which each department needs from every other department be known and recognized and the functions so arranged that these services can be properly rendered, but also that interdepartmental cooperation be given without any executive being forced to request it. Only by such an arrangement of contributory functions can harmony in the personal relations of executives be maintained. Furthermore, wherever close correlation of similar or related functions, or of identical functions geographically separated, is essential, they

must be grouped into a unit under the control of one individual. Wherever a functional division is made, however, it must be so constituted that the executive in charge can not only furnish adequate knowledge for its direction and control, but can also discharge the responsibility attendant upon his position without being overrushed or constantly on a tension. It is likewise extremely important to ferret out all positions where decisions must be rendered, in order that the division of functions may facilitate delegation of the proper authority to these positions. Equally essential is the arrangement of functions so that there will be a clear line of promotion ahead of each position, making it possible for each individual to study the work ahead of him. This increases incentive and obviates the danger of being unable to fill vacant positions from within the organization. Throughout the process of subdividing the departmental activities, the analyst must remember that it is within the department that detail is organized, systems and routine developed, and, as far as possible, results made automatic.

**Limiting Factors to Be Considered in Constructing the Final Organization.**—The subdivision of activities also requires a study of those limiting factors which must be taken into consideration in developing a workable functional organization. A recognition and analysis of these factors is just as important as a recognition and analysis of the major functions. The function as an end in itself is of no value. The division of functions must be adapted to the particular conditions which are an integral part of the business being analyzed. The failure to recognize fully these limiting conditions, and to appreciate their importance, is responsible for the breaking down in operation of numerous reorganization plans. While it is impossible to take into consideration, in the present short discussion, all these influencing factors and relationships, a statement of the more outstanding ones will help to bring out their importance.

**Available Personnel.**—The first factor to be observed is that of personnel, especially executive personnel. This involves a consideration of the men available within the organization and the possible selection of outside men. While many managers have achieved marked success through an obstinate belief in plan alone, they have done so only at the expense of carrying

the heavy burden which results from large executive turnover. Undoubtedly, such men could have gained quicker, and, in many cases, greater results by giving more consideration to the available personnel in developing their plan of organization. Good executives are always rare, and the final division of activity will often be considerably influenced by the men who are available to exercise authority and carry responsibility. The result will ordinarily be a compromise between personnel and scientific functionalization, but a compromise that does not disturb the major functional divisions or the basic principles of functionalization. In arriving at the functional layout, the analyst must closely ally his work with that of those who are to select the executive personnel, so that this important factor may not be overlooked. It must be remembered that it is the various executives in charge of the departments, who, as experts in their lines, will make the final decision as to how the individual functions of their departments are to be organized.

*Organization Inertia and Momentum.*—Organization inertia and momentum constitute the second limiting factor. These conditions are largely outgrowths of the historical development of the organization, a study of which is therefore essential before determining the allocation of functions. In the first place, every organization that has been in operation for a number of years has developed a certain amount of inertia which tends to keep it in a beaten path and which resists any change from the accustomed plan or method. The historical development of departments and the evolution of lines of authority are factors which must be recognized in any scheme of reorganization. Their hold upon the organization is tremendous, because they represent habitual practice, one of the strongest of the forces controlling men. To give full value to this historical division and these established lines of control, would, from a practical standpoint, virtually eliminate functionalization; but to give them no consideration would introduce intra- and interdepartmental confusion, to overcome which often requires years of effort.

The reorganization must maintain the smoothness of operation of the old plan, but this smoothness must now be intellectual instead of habitual. It must be the result of the simplification of

operation through functionalization. In the second place, every operating organization, in addition to its inertia, has developed a momentum which carries an enormous percentage of the load. The amount of energy required to keep the organization operating is thereby greatly reduced in comparison to the amount which would be required were the concern forced to start from a static position, and again gradually build up its momentum. To effect the reorganization and still not lose that momentum which carries the business along requires the utmost care on the part of the analyst. To accomplish this end successfully, he must introduce all changes and reforms gradually and tactfully, that he may avoid the disturbance in operation which results from abrupt and arbitrary rearrangement of functions.

*Departmental Emphasis.*—The third factor to be observed is the amount of emphasis to be placed on the various departments. It cannot be said that one division of the business is superior or inferior to another, since each part is essential. The maintenance of balance between departments, however, requires the concentration of attention upon those activities which the type of service rendered and the particular problems faced by the business in question make it logical to emphasize. For example, the company manufacturing and selling teas and spices which it distributes direct to the retailer will naturally place emphasis upon sales, since this is the heart of the problem. For the same reason, the corporation producing and selling steel will devote the major part of its energy to production, while the public utility concern furnishing light and power will stress consumer service. In every case the point of greatest complication determines where the emphasis is to be placed. This department will be more highly specialized and will receive more attention than any other department of the organization. This necessity for emphasizing a particular division of the business may be the result of various causes, such as competition, or the particular characteristics which have become an inherent part of the business, due to a traditional performance of certain kinds of service.

In order to create a practical working organization, the ideal arrangement of functions must in some measure be modified to allow for all the limiting factors mentioned above. The most logical arrangement will be secured by preserving the relation-



ships scientifically established until it has been definitely proved that modification is necessary.

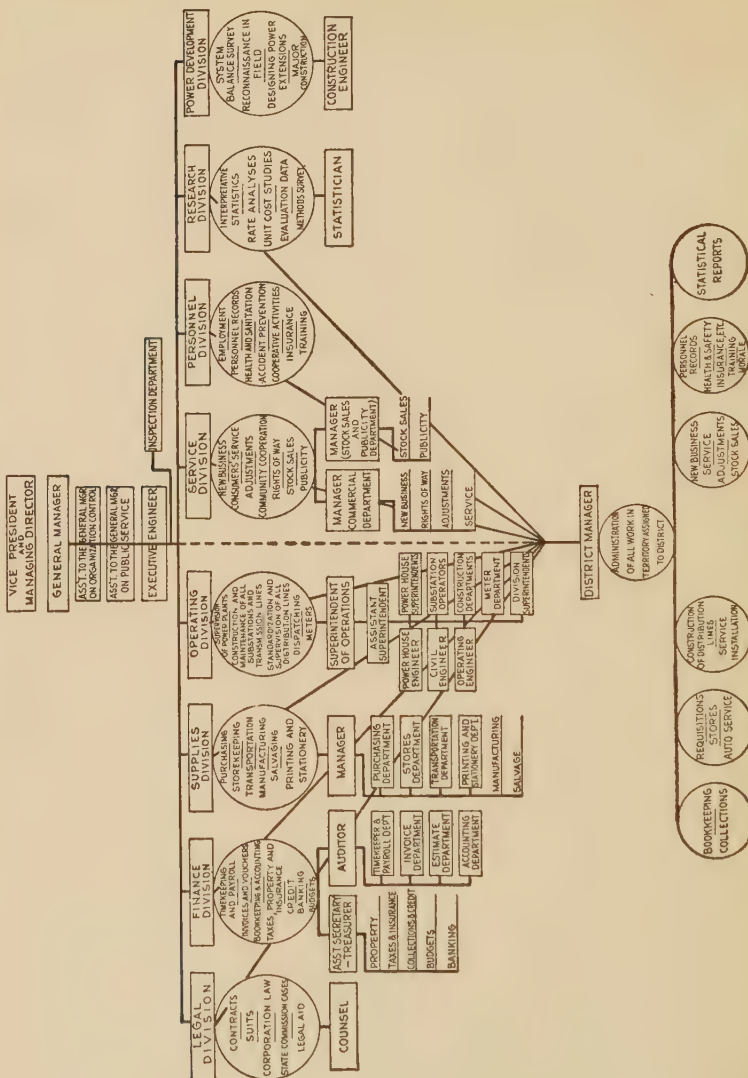
**The Classification and Placement of Functions.**—The analyst should draw up the actual functional organization in conference with those who have assisted him in the study. The object in view is an efficient functionalization of the organization as a whole, and this cannot be accomplished by taking the organization to pieces and independently arranging the functions of the different parts, assuming that the efficiency of the whole structure can be judged by the perfection of these parts. The obvious question is, "How do they work together?" The fact that each division in itself functions satisfactorily in no sense insures the harmonious cooperation of all divisions operating collectively. A conference between the individuals who have been engaged in the study insures the coordination of their effort in the final functional organization. When the classification and placement of functions has been definitely decided upon, the functional organization which the analyst believes to be the most satisfactory under the circumstances should be presented on a functional organization chart similar to Chart III. This represents the functional organization of Chart II.

It will be noted that Chart III gives only the departmental divisions and the main subdivisions within those departments. The actual work of organizing the individual functions of the departments should be done by the organization analyst in close conjunction with the executives who are to direct and control them. The detailed character of departmental functionalization calls for a familiarity with operation which only the department heads can supply. They are the ones who are primarily concerned with the execution of the individual functions, and should play the dominant part in determining how the segregation and combination is to be made. As experts in their lines, they should be more capable than anyone else of determining the allocation of these functions.

**Presentation of the Proposed Organization Structure to the Operating Officials.**—The functional organization plan is now ready to be submitted to the officials of the organization for their consideration and criticism. Under no conditions, however, should any of the administrators or executives undertake a serious



## FUNCTIONAL ORGANIZATION CHART



### CHART III.

discussion of the work unless a representative of those who made the study is present to explain the theory back of the findings shown on the chart. Without this precaution, the work is liable to unjust criticism and prejudice resulting from a narrow conception of the organization problem. The best method is first to submit the organization plan to the executive committee of the board of directors, the president, and the general manager, offering to them a clear explanation of the reasons for all changes made in the original organization structure. If this body can prove to the investigator that, in order to get best results, the plan which he upholds must be altered in any respect, the changes will be embodied in the chart.

The revised plan should then be submitted to a committee composed of the general manager and all his major executives. The investigator must again offer to this group a detailed explanation of all changes from the original structure, after which the subject should be opened for discussion. The fact that functions alone, and not personalities, are presented, makes possible an impartial discussion of the work; in consequence, the discussion ordinarily will be both complete and lively. Before any further advance can be made, it is absolutely essential that the executives either approve the major divisions established or induce the investigator to make a satisfactory compromise. When these major divisions have been definitely decided upon, each individual division should then be finally reviewed by those executives who, with the organization analyst, have made the detailed subdivision of departmental functions, so that they may criticize or approve any changes in these functions which the analyst has made in order to provide for interdepartmental relationships.

After this thorough review of the plan of organization, the final functional chart, showing how the concern is to operate in the future, will be drawn up. Chart IV is an example of the final draft of the general functional organization chart, embodying the major lines of responsibility and the changes made in Chart III during discussion, but not embodying the detail of departmental functionalization. It will be noted that the changes are of only a minor character.

**The Personnel Chart.**—Once the functional organization has been decided upon, a personnel chart showing the individuals



in charge of each of the functions, groups, etc., should be drawn up. The selection of personnel and the shifting of emphasis upon different activities to suit varying conditions, are not functions of the organization analyst, but duties of the management. It is advisable, however, to formulate a personnel chart after the functionalization of the business, in order to provide some means for showing changes in the control of functions. While the functional chart remains the same, the personnel chart is affected by every change in emphasis upon the various functions, by every increase or decrease in the personnel of the organization. For example, in the previously mentioned case of S. F. Bowser and Company, Inc., the business continued to perform the same functions, but placed different persons in charge of them. The functions of certain individuals were divided, while the functions of others were combined.

During the recent war, likewise, the shortage and inefficiency of labor caused the addition of employees in the personnel department, thus altering the character of the personnel chart, although there was no increase in the number of functions performed. Similarly, when post-war conditions made the reduction of overhead essential, the first cut was in the overinflated personnel force; yet all the activities connected with employment and discharge, training, company service, etc., still remained as proper functions of the business. It is obvious that the personnel chart, in order to be of any value, must be kept strictly up to date. Most charts of this type are little more than paper organizations, either because of improper assignment of functions to individuals in the beginning, or because of a shifting of functions and individuals after the chart was made. Since the worth of the personnel chart depends upon its accurate presentation of the relationships between those in charge of the various functions, any change in the authority and responsibility for these functions must be immediately embodied in it.

**Value of Functional and Personnel Organization Charts.**—Both the functional organization chart and the personnel chart are of primary importance in the concern. The former compels the general manager, uninfluenced by his own estimate of the men employed, to regard the whole organization as an impersonal structure. By offering a complete list of all activities, it obviates

the danger of overlooking any function in the delegation of authority and responsibility. The personnel chart, superimposed upon the functional structure, "humanizes" this functional organization. The functional organization chart shows to every member of the concern the extent of his authority and responsibility, and the relation of those functions which he is performing to the work of the whole organization. The personnel chart shows who is responsible for the performance of the functions, and the relationship of each man to the other individuals in the business. Together, the two give a definite, visible status to every function and every member of the organization. The ultimate purpose of these charts is to give in an easily understandable form data which would be more difficult of comprehension if expressed in words alone. Charts will provide at a glance a fund of valuable information which could be secured from written explanations only by considerable study. Graphic presentations, however, cannot take the place of an adequate written statement, since in the latter can be included details, which, if embodied in the chart, would make it so elaborate as to destroy its value. A chart is a guide, and the simpler its construction the more useful it will be.

**The Organization Manual.**—As the final element, the finishing touch so to speak, in the work of functionalization, therefore, it is advisable to supplement these charts by an organization manual. Such a manual can be prepared with little effort and expense, since all the necessary information has already been secured by the organization analyst and the executives in their analysis and allocation of all the functions to be performed. The manual sums up all the results of the study in a concise and intelligible form. It is designed primarily for the benefit of the workers, since the average employee is unable to interpret the functional organization chart without further explanation of the relationships presented upon it, or to see the connection between this chart and the personnel chart. With the aid of the manual, however, the relationships between departments and between functions within the departments is made clear to him. The scope of the authority and responsibility of each position and individual listed on the personnel chart is accurately defined for his benefit. To sum up, the organization manual explains in



detailed form the grouping of functions and lines of authority which the functional organization chart can present only in outline, and fixes definitely the limits of individual control which are graphically shown only when the personnel chart is superimposed upon the functional organization chart. Through the manual, the charts are made more intelligible to the worker, who can with its assistance clearly distinguish his own position and duties and their relation to those of every other member of the organization. The formulation of this book, then, marks the final step in the complete functionalization of the business.

## CHAPTER III

### THE THIRD FUNDAMENTAL OF BUSINESS ORGANIZATION : THE RIGHT MAN IN THE RIGHT PLACE

The past two centuries have witnessed a complete change in the attitude toward the human factor in industry. Before the development of machinery, human labor was the most important factor in all productive effort. Man's place in the industrial system was taken for granted, and since there was no substitute for human labor in production, attention was concentrated upon the development and utilization of that factor. The introduction of machinery and the development of the factory system brought about a complete change of emphasis. Perfection of machinery became the objective of the period, and the entire battery of scientific research was for the time being trained upon it. New inventions in the field of engineering, significant discoveries along chemical lines, and wonderful accomplishments in the improvement of industrial technique gave a tremendous impetus to this work of scientific research and to the utilization of its discoveries in industry. Each new advance forced the human factor farther into the background. There developed, as a result, a conspicuous lack of balance between the skill of the worker and the complexity of the machine, which finally forced a gradual reorganization. But this reorganization was little more than a negative move, since its basic idea was merely to simplify the mechanical devices so that they could be profitably utilized. Their adaptation to the physical and mental characteristics of the worker was given no more consideration than was essential to that purpose. The machine was still the center of interest; the controlling element of human ability remained in the background and was but unwillingly recognized.

But a change gradually took place as monopolies were destroyed through the expiration of basic patents, and as markets began to overlap and become highly competitive. This change

manifested itself in the attempt to reduce costs and to improve efficiency through other than purely mechanical means. The first attack was made upon the wholly disorganized character of industry. Concentration of all scientific attention upon machinery alone, to the almost total neglect of methods and organization of work, had resulted in extremely low operating efficiency. Taylor, Gantt, Emerson, and other early exponents of scientific organization and management, attributed this condition to the absolute lack of system in operation. They made the first positive move toward remedying the situation by introducing the scientific method into industry. Scientific direction and supervision effected tremendous savings in time, materials, and labor. Effort was directed mainly toward the discovery of the best methods; the workers who were to use these methods were still considered only as a means to an end.

When the World War came, the demands for increased production which accompanied it brought about the development of a new and general feeling of unbalance. For the first time it became very evident that highly developed technique of production, scientifically determined processes, and complicated equipment and machinery were useless without the motivating force of human brain and muscle concentrated in equally efficient and carefully chosen individuals. The conception became widespread that the worker was an end in himself, that his personal welfare and development were of equal or of even greater importance than the products of his labor (greater, because without an efficient worker satisfactory production was impossible). As a result significant changes took place in the industrial field. The most outstanding development was the attempt to secure closer correlation between the ability of the individual and the work which he was performing; that is, the attempt to fit every man, whether executive or operator, to his job in the organization. But before this could be done the business had to be more or less functionalized, since it is only through functionalization that the various types of jobs can be definitely segregated. Furthermore, it is only with the comparatively recent extension of scientific analysis into the realm of human beings that sufficient knowledge has become available in this field to enable intelligent coordination of the man and the job.

The present emphasis upon the human factor in industry is of great significance. It benefits not only industry but also the whole social system, of which those engaged in industrial pursuits form so large and so important a part. The individual who is contented and efficient in his work is the one who contributes the most to society, who makes the most desirable citizen. Although few of the attempts at scientific analysis, of either the human or the non-human elements in industry, have as yet succeeded in securing absolute results, there is no reason, given sufficient time, why physiology, psychology, and the allied human sciences should not work an improvement in the use of man-power approximate to that already secured in the use of the inorganic elements. These sciences may yet be numbered among the most effective tools of industry.

**Personnel as an Organization Factor.**—This discussion makes no attempt at exhaustive treatment of the field of personnel management. Such an attempt would entail a critical analysis and evaluation of the great mass of data on the subject which has accumulated within recent years. Under the impetus of the war this field was extensively investigated by scientists, personnel specialists, and practical business men. The importance of the personnel problem was established beyond question. Psychologists, physiologists, psycho-pathologists, psychiatrists, industrial engineers, personnel specialists, and business executives, through their studies of the human element in industry and in the army, gathered together a wealth of data which progressive management may draw on for guidance in the task of handling its men. Although in many cases no definite conclusions have been reached and many findings have yet to be established as facts, the work of these men is becoming institutionalized and is constantly gaining a firmer hold in industry. The chief danger is that a false feeling of completion may arise, arresting further progress of the work and making that which has already been accomplished undesirably rigid. The scope of the personnel field is so far-reaching, and the possibilities for the development of organized knowledge concerning it are so great, that it is replete with opportunities for further invention, experimentation, and control. In its present unfinished state, to attempt to criticize or evaluate the accumulated data concerning personnel would be

futile. This must be left to the scientists and specialists who have already done such admirable work in the field.

This discussion is considering personnel not as a problem of management, but as an organization factor for which adequate provision must be made before good management is possible. It will therefore take account of the tools of personnel research only so far as they relate to, and clarify, the problem of matching the job and the man. This problem is only one phase of the whole personnel question; but it is undoubtedly the most difficult, and its proper solution the most vital.

**Getting the Right Man in the Right Place—A Fundamental of Organization.**—In organization analysis, the necessity for matching the man and the job—getting the right man in the right place—is recognized as a fundamental of organization. When there is a given group of functions to be performed and a given group of men to perform them, great care should be exercised in matching each man, as nearly as possible, to the function which he is to carry out. This statement seems axiomatic. Yet experience has shown that this problem rarely receives adequate consideration. The negligence of those in authority may be attributed to any or all of three reasons: first, they do not know what is meant by matching the man and the job; second, they fail to appreciate its necessity; third, they do not know how to do it. The purpose of this discussion is to analyze, in so far as limited space and the present development of technique will permit, these phases of the third fundamental of organization. Getting the right man in the right place, as a fundamental of organization, is practically incontestable—the only question concerns the tools and the methods to be used in its accomplishment.

**Individual and Job Differences.**—There are innumerable differences in people, and an almost equal variation in the character of jobs. Unless these differences and variations are taken into consideration in placing men, business will neither secure the full value of the abilities of its executives and workers, nor allow the individuals to use them to their own best advantage. Considering the matter from a purely practical standpoint, the study of these differences in people and the differences in jobs is the only method which will enable managers to find men who



can actually do the work and successfully fill the positions in their organizations.

**Individual Differences.**—Individuals differ widely. It is unusual to find two men who, even in appearance, resemble each other to a marked degree; and it is still more exceptional to find two who react in the same manner under identical circumstances. Variations in appearance and action, however, are but outer and easily seen differences and may give an erroneous impression of the underlying differences in fundamental qualities. Scientists have proved that men are, from birth, unequal in mental and physical capacities—that even the possibility of developing particular capacities varies to a remarkable extent in each individual. These inherent or natural differences may be modified or enhanced, but almost never, save in exceptional cases, completely overcome by subsequent training and experience. To determine exactly what these differences between individuals are, and what their consequent effect upon future development and action will be, is the most difficult task in the whole range of personnel work. But this task must be performed if personal abilities and characteristics are to be given intelligent consideration in the organization of a business.

**Physical Variations in Individuals.**—The major physical variations in individuals are easily detectable. The chief danger in determining these differences is that too great attention will be given to the outstanding physical traits, while the subtler differentiations are overlooked. It is not difficult to decide that a man's strength is below average; neither does it require any lengthy deliberation to determine that his muscular control is defective in certain respects. These are more or less obvious limitations. Differences in height, weight, muscular strength, and general bodily development can be recognized almost immediately, and the degree of their variation from the average, or from the desired standard, determined with but little difficulty.

The consideration of what may be called the general "motor capacity" of individuals reveals further physical diversity in human beings. A man may have unusual strength and yet be unable to utilize that strength except in the performance of the simplest tasks, through lack of precision and control of movement which another man may have to a marked degree. The

motions of certain individuals may be characterized by steadiness and deliberation, while those of other persons may be very rapid but equally accurate. The skill of one man may lie in his ability to perform a simple motion with unusual speed, while that of another may consist of being able to secure coordinated action in the performance of several complicated motions. These varying, more or less hidden, characteristics are fully as significant as the more obvious ones.

Still less apparent, and consequently less easily determinable, are the physical differences resulting from variations in the keenness of the sense perceptions. The same food may not have the same flavor to two individuals, simply because the sense of taste may be more highly developed in one than in the other. Range and length of vision, as well as rapidity and keenness of visual perception, are possessed by various individuals in markedly varying degrees. The difference in the amount and accuracy of the visual images which can be recorded by different people in the same length of time is found to be considerable. Although some people are very sensitive to shades of color, color-blindness, especially among men, is a fairly common visual defect. Differences in the sense of touch and in auditory perception are equally great. Certain people, for example, are highly sensitive to tactual impressions, while others find difficulty in distinguishing between various kinds of material without the aid of senses other than touch. Differences in the ability to hear distinctly, and to retain oral impressions, are so common as to need no explanation. The difficulty lies in determining accurately the keenness or the dullness of the auditory perception of any particular individual. All of these factors have a distinct bearing upon the individual's fitness to perform certain types of work within the organization, since each type usually requires the possession of one or more of these senses in a more or less highly developed state.

**Mental Differences in Individuals.**—Physical variations are no more important than mental ones. The physical and mental characteristics of an individual are so closely connected that an analysis of one without the other is of but uncertain value in fitting the man to the job. A man's mental make-up may have an overwhelming influence upon his capacity to utilize his physi-

cal abilities, and his physical make-up may be a help or a hindrance in the fulfilment of his intellectual possibilities.

There are, in general, three phases of mental make-up through which individual differences are manifested—temperament, intellect, and moral character. In temperament and emotional characteristics lie those differences which are commonly referred to as differences in “human nature.” Some men are nervous and easily excitable, prone to hasty and thoughtless action; while others are calm and not easily aroused, given to deliberate and meditated procedure. The former might be adversely affected by being compelled to perform monotonous work or to carry on the work in noisy surroundings, while the latter would feel no injurious effects under such circumstances. This is primarily a matter of temperament.

Just as there seems to be an inherent difference in individual temperament, so there is an inherent difference in individual intellectual ability, commonly referred to as intelligence. There is a marked variation in ability to absorb knowledge, to respond to training. There is, moreover, a peculiar characteristic of this variation which is particularly significant in fitting the man to the job. People differ not only in *general* intellectual ability, but also, and more widely, in intellectual ability along relatively specialized lines. Even within the same trade, occupation, or business, intellectual variations are noticeable. For example, the man who is a remarkably good accountant might fail utterly in the sales department, simply because his special aptitude did not lie in that direction. In some cases, the spread of intellectual ability is so great, the intellectual balance of the individual so fine, that it is difficult to determine the particular lines along which his intellect functions with greatest keenness. But these cases are not common, and there is usually a determinable tendency toward some one field of activity. This by no means implies that, were every individual placed in the work for which he has been best fitted by his intellectual inheritance, he would immediately accomplish extraordinary results. Geniuses are rare, and their ability is concentrated to an unusual and often undesirable degree upon a single phase of mental activity. It does imply, however, that a person of so-called normal general intelligence, if given proper education and training in the field

to which his individual type of intellect is particularly adapted and in which he is most interested, will be more susceptible to this training and will reach a higher level of efficiency as a result of it, than if he were being instructed along some other line. Furthermore, no amount of training can give the "knack" of the work to the person who lacks the fundamental aptitude for it, and he is therefore at a disadvantage when competing with the man who is primarily suited to it. These fundamental differences in intellectual capacity are additional factors contributing to the variation in individual adaptability to the many dissimilar types of activities performed in the business organization.

People differ in still another phase of their mental make-up; that is, in moral character. In the study of this phase, science has made but little progress. Psychologists admit its importance, recognize the influence of direction and training on its development, and grant its existence in varying degrees in different individuals. But they make no claim to ability to ascertain, by any scientific method of measurement, the strength or weakness of a person's moral character. Certain individuals are of unquestionable honesty and integrity; others are honest and reliable only to a degree which suits their own purposes and enables them to evade actual punishment by society; still others cannot be trusted in any circumstances. The problem is to determine in which category an individual should be placed, without the necessity of finding out perhaps by unfortunate experience. The necessity of determining these moral characteristics before employing or placing a man depends, of course, upon the type of work which he is to do. Provided that he is not a criminal, the moral character of a laborer is of comparatively little import. But the honesty and reliability of the bank cashier is a matter of extreme consequence. There is as yet no satisfactory method of determining moral character. It is known only that individuals vary in its possession.

**Influence of Education, Training, and Experience.**—Education, training, and experience play an important part in developing and fixing personal characteristics. Two men, whose physical endowments were originally almost equal, may vary widely in their ability to perform certain kinds of work involving



muscular activity, because one has benefited by physical training which has been denied to the other. Of two men, both with a native intellectual tendency toward mechanics, one may be fitted only for work in a machine shop, while the other, owing to additional advantages of education and training, is capable of designing machinery. Temperamental and moral differences may also be created by education and training.

In almost any field, and particularly in business, people differ owing to the influence of the individuals under whom they have received their training. In selecting men for executive positions, it will often be found that those who have been under the direction of a man with real executive ability will have so thoroughly absorbed his viewpoint that they too are fitted for the higher executive positions. The viewpoint of the men who have been trained by a "detail" executive, however, is liable to be so circumscribed that they are suited only for minor positions in the organization. Investigation has shown that a man's viewpoint in business is almost entirely determined by the training and experience which he has received and by the personal influences to which he has been subject.

**Job Differences.**—Within industry as a whole, and even within the structure of a single organization, there is a wide range of jobs whose differences are almost as great as those to be found existing among individuals. In practically any business, the variation between the characteristics of the administrative, the executive, and the supervisory positions, and the workers' jobs, is so wide that they demand totally different qualities and capacities, while the latter jobs run the whole gamut of differences in the abilities which they require. There are three general classes of positions in almost any business: those which require mainly mental effort; those which demand primarily physical exertion; and those which necessitate a combination of both types of activity.

The differences between the jobs included in these categories are best illustrated by citing a few general examples of the individual characteristics, or the types of individuals, which they require. The administrative position at the head of the business has a broader outlook and a wider scope of activity than any other in the organization. It demands, consequently, an especially



strong imaginative tendency, the ability to think in large terms and to visualize as a whole not only the nature of the present trend both within and without the business, but also the probable future trend. This position makes almost no demand upon physical or motor capacity, but usually requires, for its attainment, a comparatively long period of training and experience.

This is also largely true of all executive positions, which demand, primarily, sound and rapid judgment, the ability to select and lead men, the ability to delegate detail, and sound training in technique. Positions as department heads vary in character and requirements with the type of work being done in the department. The sales manager's job, like that of the head of the business, requires an abundance of imagination; the chief accountant's position demands accuracy and an aptitude for analysis of figures; the chief engineer's position necessitates a mechanical turn of mind; while the job as head of the production department calls for technical knowledge of materials, methods, machinery, and general operation. While all of these executive positions demand a certain knowledge of detail, in order that affairs within the department may be efficiently directed and controlled, they also require the ability to subordinate that detail to consideration of the department as a whole; that is, the ability to make detail routine and automatic, so that it will not draw attention from larger problems. Supervisory positions require detailed knowledge of the work being done and constant and intimate contact with it, through the performance of supervision and instruction. These jobs also demand a certain amount of physical ability and skill along with mental requirements.

By far the widest range of variation in requirements is found in that class of jobs concerned with the actual operation of the business, in which the work of the organization is finally executed. At the top of the scale are jobs such as those of the skilled mechanic, the production clerk, the inspector, the draughtsman, and similar operators. In all of these jobs something more than average intelligence and a special aptitude along one line are necessary to supplement a certain amount of physical skill. Requiring less mental ability and more physical dexterity are jobs which involve the sorting or assembling of machine parts, the packing of goods for shipment, and similar activities. As

the scale is descended, the amount of mental ability required becomes constantly less, until those jobs such as automatic machine tender or ordinary laborer are reached. These demand almost no mental ability, but largely average physical strength or dexterity. In fact, for automatic machine tending it has been found that individuals even mentally defective are satisfactory and valuable workers, and for extremely monotonous work they are often actually preferable, since the mind of the defective is not subject to the strain which might seriously affect the worker of normal intelligence.

**Obstacles to Perfect Coordination of Job Requirements with Personal Qualifications.**—The ideal state of affairs within a business would be that in which every position was filled by a man whose physical and mental characteristics were better suited to the position which he occupied than to any other. Under existing conditions, the attainment of such a state is impossible. Neither the material nor the human sciences have progressed far enough in their study of industry to enable accurate determination of the exact qualities and capacities which are required for efficient performance of a particular job, or of the specific characteristics which are possessed by the individual to make him fit or unfit for the job in question. Even though it were possible to determine these factors with absolute exactitude, there would still be an obstacle to the perfect coordination of personal qualifications with job requirements. The limitations in individual ability, and the limitation in the sources from which men can be drawn to fill the various positions in the organization, make it impossible, in a majority of cases, to find just the type of man desired.

But in the carefully functionalized organization, a majority of the positions have well-defined requirements which remain virtually the same during the operation of the business. Success in placement depends upon the ability to find men who can meet these requirements satisfactorily. The scope of the position itself usually cannot be altered without undesirable disarrangement of the functional structure. Since it is rarely possible to secure the *ideal* man, it is frequently necessary to take the best *available* man. Especially in the case of executive positions, the individual selected will often possess not all, but only the most

important qualifications and characteristics essential or desirable. Some provision must consequently be made for supplying those qualities in which he is deficient, or for offsetting those tendencies which are too highly developed. This can best be done by "balancing" the individuals in the organization; that is, by so combining the efforts of two or three that their concerted action will ultimately produce the type of results desired in the position. The executive with a tendency to generalize, for example, should be provided with an assistant who will give proper attention to detail; and the hasty, impetuous executive should be offset by the restraining influence of an assistant whose actions are calm and deliberate. This combination of opposite or complementary temperaments and capacities is possible only when the executive himself recognizes his special ability, and the necessity of balancing or supplementing it by other qualities. The combinations should be made with extreme caution, since not all types of men will cooperate with each other, and harmony is essential to the success of these relations.

**Personal Characteristics Required in Administrative and Executive Positions.**—While at the present time it is impossible to state with any scientific accuracy the chief characteristics of an administrator or an executive, general observation and some analysis of many eminently successful organizations, both large and small, have shown that the individuals who occupy the different positions of importance throughout the concern usually possess certain general characteristics which are more or less common to their particular places in the organization; that is, they seem to possess certain qualities which make them the "right men" for their respective jobs.

*President.*—The president, for example, occupies an extremely important position in the organization. He is the keystone of the whole structure, bearing a greater weight of responsibility than any other member of the concern. If this essential part is weak, the strength of the whole organization will be undermined. The qualities of the president should include primarily that foresight and breadth of vision which will enable him to direct the future of the business successfully. This requires the ability to adapt it to changing social and economic conditions, and to control with tact and diplomacy all its external relationships.

*General Manager.*—With the man who occupies the position of general manager rests the responsibility for the actual operation of the organization, for the stimulation of all its parts to the highest possible pitch of efficiency, and for the coordination of all its efforts into united action. To discharge these responsibilities satisfactorily, he must be a man of the caliber which inspires loyalty and confidence in those with whom he is working—confidence not only in himself but in themselves also. The dynamic force of his personality must be transmitted to his executives, stimulating in them respect for the ability of their chief and desire to do his will. The really great manager is the one who has the moral courage and the backbone to face without hesitancy every problem which arises, coupled with the indomitable will to carry every undertaking through to a finish. His secret is, not that he is able to bear all the responsibility or to do all the work himself, but that he has the ability to pick the right men for the work he wants done, to organize their brains, and to inspire them to the accomplishment of his purposes. A winning personality, which secures the cooperation and goodwill of his men; consummate tact and knowledge of human nature, which guides the effort of these men, without friction, into the paths of greatest usefulness; a keen, analytical mind, which makes decisions based on reason rather than rule; and, especially important, balance of vision, which enables proper estimate of every factor—these are characteristics which distinguish the real chief executive from the mediocre general manager. Leadership ability—ability to set an example and to have it followed—is the quality in which all the others are embodied, and through which the general manager will exercise his greatest influence over the organization. His personality will be reflected throughout the business; he will be held up as a model. His keen mind and accurate judgment must give to every man in the concern the cue for his own action. The general manager, above all, must be the “right man” to fill his position—and “fill” it in every sense of the word—for it lies within his power to build up or to destroy the organization.

*Department Heads.*—The general manager should be only the first of a group of equally well-placed and capable men. The department heads need virtually the same qualities as the



general manager, with this difference: while in the general manager balance of vision and coordinative ability are the dominant characteristics, in the department head knowledge of his field is the thing of paramount importance. In addition to his general executive ability, the department head requires specialized technical information which is not so essential to the general manager. He must be able to separate the essential from the non-essential, to organize detail, and to exercise conservative judgment in the selection of methods. The difficulty lies in securing a man who possesses the ability to direct and control others, and to think and act from the point of view of the organization as a whole, combined with the capacity for handling specialized detail. When such a man is found, although his general executive ability may fit him to direct and control any department, his specialized knowledge probably will be in one particular line of work, and this will be the chief determinant in placing him in the organization.

*Foremen and Supervisors.*—It is now generally conceded that the foreman or supervisor should be more than a mere “over-seer”—that he should be as truly a leader and teacher as the general manager or the department head. Belated recognition of the importance of these minor executives as the “buffers” between management and men, as the interpreters of the will of the management to the workers, has resulted in the placement of greater emphasis upon their selection and training. Formerly, possession of technical knowledge and ability with regard to the physical factors concerned in his work was considered adequate qualification for the foreman or supervisor. At the present time, possession of the personal and intellectual characteristics which will enable him to obtain the cooperation and loyalty of his men and to direct them intelligently, is regarded as equally essential. The foremen and supervisors occupy the strategic position in industry. They are responsible to the management for seeing that its policies, standards, and instructions are carried out. They are responsible to labor for the guidance which will enable it to do the work according to these directions. They have the opportunity, more than any other group of men in the organization, to prevent misunderstanding and friction between management and workers.



**Basic Reasons for the Correlation of Men and Jobs.**—There are three basic reasons for the correlation of men and jobs. The first is in order to be sure that those who are in positions of authority are the right type of men to exercise that authority. The second is to protect the worker by placing him in a job for which he is naturally fitted, thus preventing physical injury and eliminating unnecessary fatigue. The third is to aid in building up a stable working force so that it is not constantly necessary to break in new men through the loss of old workers who were dissatisfied with their jobs.

**Preventive Value of Proper Placement of Administrators and Executives.**—By filling the administrative and executive positions with men who are capable of effectively directing, supervising, and controlling the organization, proper placement, through its careful analysis and utilization of the man-power of a concern, achieves a most essential result. In these positions, the scope of the authority and responsibility is so wide and the requirements so varied, that tremendous power for good or evil to the business is concentrated in the hands of those who fill them. These men, while relatively few in number, have an opportunity for injury to the business which surpasses that of all the other members of the concern. Proper placement of the limited amount of available administrative and executive material—placement where its fullest capacity for usefulness to the organization will be exercised—guards against the utilization of this opportunity.

**Safeguarding the Worker by Careful Placement.**—Even a superlatively efficient corps of officials cannot function effectively without the cooperation of a capable and contented working force. The existence of such a force requires that the operators, as well as the men who direct and control them, be selected and placed with due consideration for their natural aptitudes and limitations. The failure of many concerns to consider these factors is probably due to the possibility of filling jobs with men who are not the “right men” in the sense of the term as previously explained. It causes no immediately noticeable diminution in the efficiency of the organization to disregard individual temperament and characteristics in placing men in the minor positions. But there will be a resultant lack of skill

and interest which in a short time will cause inefficient performance on the part of the worker, manifested in his careless use of machinery, his waste of materials, and similar evidences of indifference. The inability to do work with more than mediocre efficiency tends to discourage the operator and to break down his morale. The management suffers from his lack of skill in the performance of the work, from his failure to improve as he should with experience, and from his failure to put the greatest possible energy into the job. Sedulous and continued effort depends upon interest in the work, which in turn requires that the work be suited to the employee. Dissatisfaction of the worker almost inevitably has a detrimental effect upon both quantity and quality of production and is accompanied by a lowering of the efficiency of the concern.

**Physical Injury.**—The greatest harm done by improper or careless placement is to the worker himself. This is most obvious when it results in actual physical detriment to the worker who lacks the skill or the capacity to perform his assigned work. Not even the most elaborate system of safety devices can prevent injury to the employee whose strength gives way when he most needs it, or whose nerves break down under the tension of continuous and rapid performance. The industrial hazard, for instance, of using as a crane operator a man who has poor motor control, is infinitely greater than that afforded by the proper use of so-called dangerous machinery. The man whose hearing is defective is a constant menace in a position where his performance is controlled by spoken signals. The oft-cited rashness of employing a color-blind locomotive engineer does not exceed the imprudence of placing men on work which overtaxes their strength, undermines their health, and makes them a menace to the safety of every one concerned. Physical deficiencies, moreover, are often the result of improper placement, so that it is essential not only to fit the worker into a position that is not antagonistic to those limitations which he already possesses, but also to place him in one which will do him no further injury. A comparatively slight physical defect which totally unfits an individual for performing the activities of one job might be immaterial in another. From the standpoint of the maintenance of physical well-being alone, proper placement is of great significance.

**Fatigue.**—The fact that no immediate and obvious physical harm results from the performance of the work does not always mean that an individual is suited to his job. Fatigue is another important factor. The study of fatigue, from both an industrial and a psychological point of view, is still in the process of development, and many of the conclusions reached so far are only tentative. But it is not difficult to observe that in almost any organization, certain workers seem to fit into their jobs and to perform the requisite duties with ease and dispatch, while others, to all outward appearances equally able to do the work, tire much more rapidly. There is a certain amount of natural or necessary fatigue which results from any kind of activity, regardless of the fitness of the worker or the efficiency of his methods. In addition to this normal fatigue there seems to be in some cases further unnecessary fatigue which could be eliminated. It is with this unnecessary tax on the worker that proper placement is concerned, since it appears to be the result of a discrepancy between the abilities and characteristics of the worker and the requirements of the job.<sup>1</sup>

Excessive strain on the worker may produce either of two distinct, though closely related, types of fatigue—physical or mental—depending upon the nature of the strain. Physical fatigue has been fairly well defined, so that it is now possible, by providing proper working conditions and rest periods and by developing methods which secure the greatest economy of movement, practically to eliminate unnecessary physical strain. This presupposes that the worker has the physical ability required to perform the necessary activities. Otherwise, no amount of scientific study can devise a method whereby he can do the work with as little fatigue as the individual who is suited to it. It is certainly not reasonable to expect the man who is fitted to work with delicate machinery to handle pig iron as effectively or with as little strain, as an individual who is built for that type of work. The prevention of unnecessary physical fatigue by determining physical characteristics and adapting them to the proper work is now possible in a majority of cases.

<sup>1</sup> MUSCIO, BERNARD, "In so far as a man does the work for which he is naturally most fit, he works easily and with relatively little fatigue, since he moves along the lines of least resistance." "Lectures on Industrial Psychology," pp. 106-107.

Mental fatigue is less amenable to measurement and less easy to eliminate than physical strain. It usually arises from the lack of correlation between the type of work being performed and the mental equipment of the individual who is performing it. Work which does not utilize the intellectual abilities available in the individual, or which demands of him a mental effort for which he is not equipped, or in which there is for him a lack of interest, is bound to cause excessive mental strain and fatigue, though there have been as yet no methods devised whereby its amount may be determined. Where there is lack of interest, morale is deadened, and the worker fatigued by an undue expenditure of will-power and energy to force himself to the performance of an unwelcome task.

Mental fatigue has frequently been attributed to a so-called monotony resulting from the repetitive activity so common to the minute division of labor in modern industry. F. B. Gilbreth, although admitting the existence of monotony in certain cases, seems to contest this general charge:

Now, when we attempt to get down to the fundamentals of the matter we find that the habitual becomes monotonous only when there is no element of interest in what is being done, and when the higher mental powers that should be set free by habit, because they have nothing to do, go drearily over and over the mechanical acts that demand nothing of real attention.<sup>1</sup>

The only possible conclusion seems to be that the effect of monotony, or rather the existence of monotony, in almost any type of work, depends upon the temperamental and intellectual characteristics of the individual, and is therefore another factor to be considered in his placement. Upon some individuals, the constant performance of the same operation seems to work no additional hardship; to others, this type of work is unnecessarily fatiguing. If it is possible to place a man in a position where he is efficient, interested, and contented, it will matter but little whether or not the work is, to the outward observer, monotonous, since this is almost entirely an individual and personal consideration.

**Labor Stability.**—Dissatisfaction and instability of the working force are, in large measure, the results of unsystematized employ-

<sup>1</sup> GILBRETH, F. B. and L. M., "Applied Motion Study," p. 179.



ment methods which fail to give proper consideration to the relation of the man and the job. It is possible, by a process of shifting and elimination somewhat akin to the survival of the fittest, to retain, eventually, a satisfactory force of reasonably capable men. But a little more time and energy spent in their original selection and placement would considerably lessen the expense of this costly process of weeding out and replacing misfits, and would prevent the loss of capable workers who became dissatisfied because of being wrongly placed. The question is, at bottom, one of selection versus reselection; and, in the long run, the latter is the more expensive.

There is scarcely a more serious obstacle to efficient production than the constant turnover of labor, with the numerous wastes it entails; and improper placement, with its attendant dissatisfaction and unrest, is the greatest single cause of this turnover. Labor turnover involves not only the initial cost of selection, perfunctory though the process may be, but also the varied costs of breaking in a new man, together with his comparative inefficiency while becoming adjusted to the job, and, if he is a misfit, his lack of interest and efficiency while on the job. At no time during his sojourn in the organization does the misfit worker fill his position with efficiency.

Contentment is the prime requisite to stability. The man who possesses executive ability will not long remain in the job which denies him the opportunity to exercise that ability; the man who is fitted only for routine work will stay but a short time in an executive position; and the person whose natural characteristics make him a good salesman will soon rebel against office work. Individuals who are placed in positions either above or below the level of their ability, or for which they are temperamentally or physically unsuited, constitute a rapidly changing personnel. The organization that would possess stability must of necessity correctly match its workers to the functions they are to perform. There are, in industry today, entirely too many "chronic grouches" who are never satisfied because they have not been able to find their proper niches. Some, in fact, have degenerated, through being constant "misfits," into men actually "unfit," unable to hold any job for a reasonable length of time. The formulation and use of a



plan by which a man can be placed at the work for which he is suited will prevent the development of this class of unstable workers and do much toward the solution of the problem of labor turnover.

**Getting the Right Man into the Right Place.**—It is an easy matter to decide that the right man should be put into the right place, but a difficult one to get him there. Theoretically, nearly every individual is free to choose his own vocation in life. Practically, there are innumerable obstacles to freedom of choice. More often than not, economic necessity forces him into any place that happens to be available at the time, regardless of his adaptability to the work. Even though this pressure may not be present, most individuals do not realize their own capabilities sufficiently to make an intelligent choice of occupation. Society, by depending upon the interests and inclinations of the individual himself to shove him somehow into the vocation for which he is best fitted, has suffered a great loss of potential human ability. The young man about to enter business has seldom analyzed his qualities with sufficient care to be aware of any special aptitude which he may possess. This aptitude often becomes apparent only after considerable experience, and then perhaps by the merest chance. He is, furthermore, subject to many influences which have no relation whatever to his personal characteristics. Perhaps he enters a certain trade because his father followed it before him. Perhaps he accepts a job because it offers quick returns. Perhaps he takes up a line of work because of the advice of a friend, regardless of the practical value of that advice. All such circumstances are accidental, and their occurrence has nothing to do with the natural tendencies and qualifications of the individual. They are at times supplemented by a superficial or temporary interest in the work selected, but the individual, having formed his opinion of the vocation which he is entering merely from a knowledge of its more outstanding and apparent characteristics, is frequently quite unaware of its exact nature. Except in cases of obvious aptitude in one direction, there is usually no voluntary attempt on the part of the individual to select work which will be suited to his physical abilities, temperament, and intellect.

The real root of the trouble lies, in a majority of cases, not with industry itself, but with the factors that are concerned in the development of the individual before he reaches the actual choice of a life work—that is, with the home, the school, or perhaps the concern in which he does part-time work. There has not developed, as yet, a system of vocational guidance and training sufficiently widespread to solve the problem. Upon management, consequently, falls the responsibility of directing the flow of human energy into the proper channels, of fitting each individual as nearly as possible into the work which he should be doing. Since the individual himself, through lack of proper information, cannot intelligently choose his place in the organization, it must be determined for him.

**Functionalization.**—Functionalization has contributed probably more than any other factor toward making possible the development of scientific selection and placement. By separating the work of the organization into various specific functions, it has furnished definite factors with which to deal. By including in a position only one, or at most a few similar or related functions, it has made specialization possible, so that in the functionalized business it is no longer necessary for the employee to be able to perform diverse and unrelated tasks in order to hold down his job. By definitely fixing the limits of the authority and responsibility of every position in the organization, functionalization has made it possible to determine accurately the duties and responsibilities of each, and consequently, its requirements.

**Job Analysis.**—Job analysis, a logical outgrowth of functionalization, offers the most productive aid to the intelligent placement of men. Heretofore, many concerns have placed their emphasis in personnel work solely upon the individual, and upon the determination of his personal characteristics and fitness for the work. A casual survey of the various jobs which were to be filled, for the purpose of determining their outstanding features, was considered sufficient for placement purposes. But it is now quite generally recognized that definite and detailed knowledge of the content of the job—that is, the activities involved in it, the conditions surrounding it, and the qualities required in the individual who is to fill it—is fully as essential as such knowledge concerning the person himself. It is impossible to fit a

man to a job without first knowing in detail just what the job includes.

Job analysis has been defined as “. . . a method of scientifically dissecting a job in order to determine the component elements and their influence upon the length of learning period of the worker, production and labor turnover.”<sup>1</sup> This involves a study of each of the three factors mentioned as part of the content of the job. The first phase of the study includes an analysis of the component elements of the job itself, which gives a comprehensive picture of the various operations which are included in its performance. The second consists of an analysis of the modifying factors and conditions surrounding the job, which reveals the circumstances under which these operations are to be carried out, and the relationship of the particular job being analyzed to other jobs in the organization. But the human as well as the foregoing mechanical or external aspects of the job must be taken into consideration. A complete job analysis also investigates the position from the point of view of the *man on the job*. It is not the position independent of the worker which is important, but the position in relation to the man who occupies it. Thus the third phase of job analysis involves a study of the qualifications which the job demands in the individual and of the effect which the performance of the work will have upon him. These are the three principal elements of an adequate occupational analysis; to neglect any of them means that an incomplete conception of the various jobs is secured.

In the conduct of the analysis, there are two points of emphasis. The first is that the greatest care must be exercised in order not to arouse the antagonism of the workers and the executives, but to enlist their confidence and cooperation. Whoever makes the analysis must be tactful and diplomatic in his approach to employees; otherwise, he will be unable to secure from them the desired information. The second is that the analysis must be on a basis as nearly scientific as possible. Where its object is to secure information as an aid to placement, this purpose should be kept constantly in mind, so that time will not be spent in collecting superfluous and irrelevant material. Furthermore,

<sup>1</sup>STRONG, JR., EDWARD K. and UHRBROCK, RICHARD S., “Job Analysis and the Curriculum,” p. 22.

the analysis should be made of the definite *facts* of the job in question and not merely of its abstract and apparent characteristics. This requires a detailed study of all phases of the work and usually involves the use of time and motion studies and similar detailed methods. Finally, the facts should be so combined and correlated as best to suit the purpose for which the analysis is being made, and should be expressed in a specific and understandable manner.

**Job Specification.**—The information secured by the job analysis provides a definite basis for the formulation of job specifications, which consist of a written expression of that part of the findings of the analysis which is essential in placing the worker. These specifications are in written form and should include such items as the name of the job, the department, and the foreman; the rates and hours, with the opportunity for promotion; the description and requirements of the work (that is, the process, together with the equipment and materials used); the general working conditions, including place, posture, hazards, etc.; and the personal requirements of the job (that is, physical, mental, educational, and social requirements, age and nationality preferred, necessary training and any other special requirements pertinent to the job in question). Such specifications serve a twofold purpose. They acquaint the employment manager, or whoever is in charge of the work, with all the qualifications which the individual must have in order to fill a certain position, and they give the prospective occupant of that position a clear idea of its conditions and requirements, its advantages and disadvantages. And so it becomes possible to place the individual both to his own satisfaction and that of the employment executive.

An important consideration, frequently overlooked, is that after the analysis of the jobs in the organization has been completed, the ideas of the individual who made the analysis should be carried out in selecting the men to fit the specifications which he has formulated. If an industrial engineer makes the analysis, it is advisable for him to select and train the individual who is to select men for the jobs. If a "personnel psychologist" analyzes the positions, it is advisable to let him decide upon someone who can make the selection in accordance with his views. The reason for this is that any other method results in a mixing of technique



which often brings disastrous consequences. The sciences of job analysis and of the selection of workers are both so new, and their principles are as yet established with so little exactitude, that there is apt to be, in various individuals, a difference of viewpoint concerning the nature of the two which would cause difficulty if the selection were made by a person unfamiliar with the attitude of the analyst. The one who analyzes a job knows exactly what sort of a man he wants for that job, but he might have difficulty in conveying this exact knowledge to an individual who, having a somewhat different conception of the work, might be liable to misinterpret his specifications. Under present conditions it is better to give the man who analyzes the job authority to choose the person who will carry out his ideas in selecting the man for the job.

**The Interview.**—The first step in the actual selection and placement of the worker is, in a majority of concerns, the interview. The interview serves two primary purposes: (1) the preliminary determination of the individual's general fitness for a particular job; and (2) his introduction to the organization. While it is impossible to ascertain, merely by means of an interview, all the physical, temperamental, and intellectual characteristics of an individual, the capable interviewer, by means of tactful and well-directed questions, can get a fairly accurate knowledge of the man's personality, his character and attitude. The interview is especially helpful in selecting men for placement in administrative or executive positions, where such qualities as poise, appearance, and bearing, which cannot be determined by any means other than personal observation, are important. In choosing men for the other jobs, particularly those which require a special type of labor, the interview is primarily of value in determining which workers merit a more thorough examination and what the specific nature of this examination should be. The most essential factor in getting the right kind of men into the organization, and in giving those who are selected the right start, is a competent interviewer who understands human character and who is interested in men as men, not merely as human machines for production. He must be a man who can gain the confidence of those examined and who can therefore elicit sincere and significant responses to his queries.



The interviewer is the company's representative to the applicant; it is from him that the applicant receives his first impression of the organization. The attitude maintained should be such as to inspire respect and confidence in the good intentions of the concern.

It is impossible for any one person, no matter how well informed or how well trained in the work, to pick, merely on the basis of his own personal estimate, the right man for every place in the organization. The infinite number and variety of differences in individuals is too great. Some men, through long experience, have become so proficient in the work of selection that their success in this respect is almost phenomenal. But these men are rare; the average interviewer or personnel executive cannot be expected to accomplish similar results. No amount of questioning, and no casual observation, will give an exact knowledge of the individual's physical qualifications; neither will they give an adequate conception of his intellectual capacity. There have developed, consequently, various aids to supplement the interview and the personal judgment of the individual who selects and places the workers.

**The Physical Examination.**—The most universally used of these aids is the physical examination. It has long been recognized that the worker cannot be intelligently placed in the organization until definite knowledge of his particular physical abilities, or of his limitations, has been secured. An adequate physical examination, administered by a competent and reliable physician, indicates whether or not the individual possesses the major physical abilities necessary to enable him to handle efficiently and without injury to himself the work of the position for which he is being considered. Different kinds of work naturally require particularly careful examination regarding certain characteristics, such as strength, manual dexterity, eyesight, hearing, or resistance to special working conditions of heat, cold, glare, dust, etc. Such examinations facilitate the placement of the worker in a job which enables him to make the best use of his abilities at the time, and which protects his ability to continue performance of such work in the future.

**The Trade Test.**—An innovation which followed the war was the application of the principles of the army trade tests to indus-

try. The actual tests themselves, designed to meet special war conditions, could not be used in their entirety in the business organization. Nevertheless, the success with which they were employed in the army for the purpose of quickly ascertaining the individual's knowledge of the activities of a particular trade, and his ability and skill in performing certain specific tasks involved in that trade, seems to indicate that the army test principles can be utilized profitably in industrial selection. The method of their employment varies according to the nature of the business, but there are three general ways in which they may be used to determine occupational skill. The first is to embody, in the interview, carefully formulated trade questions calculated to check the individual's statement as to his experience and ability in a certain line of work. Such questions must be directly related to the work under consideration and so formulated that each permits of but one definite answer, which cannot be arrived at by guessing but presupposes an actual knowledge of the trade. While this technical interview gives more specific information than the ordinary interview, it does not provide a basis for giving the applicant a definite score or rating. The second method is to supply photographic reproductions of tools or parts of the work included in the trade and to require the individual to identify and explain them. The third is to have the individual actually perform a part of the work involved in the process of production, with tools and materials provided for the purpose. The last two methods cannot be used except in certain industries; the first permits of wider application and can be used with no interruption of the regular and established procedure of employment.

Trade tests, in any case, should be used only in connection with other methods of selection, and with a definite recognition of their limitations. In their present stage of development the tests are of value only as an indication of the individual's acquired knowledge concerning certain work. They give little or no information as to the fitness of the individual for that work in respects other than training or outstanding physical characteristics. They afford no basis for determining whether his natural aptitude lies in the work for which he has been trained, or in some other line. To secure this information a different type of test is necessary.

**The Psychological Test.**—With the object of supplementing the information given by the trade test, and thus more successfully placing men, the field of business psychology has been developed. This development was stimulated by the general interest in government investigations during the war. Psychological tests were introduced into industry in the hope of ascertaining the actual and potential ability of the worker along mental, or intellectual, lines, and likewise with the idea of discovering the special character of that ability—a knowledge which would greatly facilitate the determination of the type of work at which he should be placed. As regards the first object, the tests have met with success; as to the second, they have as yet been unproductive of reliable results. The scope of their present usefulness is therefore subject to definite limitations.

While psychology recognizes facts that indicate various intellectual aptitudes, it claims no ability to ascertain by test the nature or extent of these different aptitudes as embodied in a particular person. Nor does it claim the ability to measure certain individual qualities such as temperament or emotional and moral characteristics. The consensus of opinion regarding psychological tests in business, however, does grant their value as a measure of actual, and, to a certain extent, potential mental ability—that is, as a measure of general intelligence. The prevalent attitude of the psychologists is that tests for general intelligence can be successfully employed in industry to indicate the general level of mental ability of an individual, a knowledge of which is essential to judicious placement. The greatest usefulness of such tests lies in the separation of those who are mentally alert from those who are mentally slow. Thus they serve to eliminate workers of low intelligence from responsible positions where they would be incompetent or even dangerous, and to prevent the waste of exceptional mental ability in minor positions. It is possible to measure with reasonable accuracy the mental resourcefulness of the individual, that is, his ability to learn or to respond to training, his ability to reason, and consequently, his adaptability to new situations, all of which qualities are included in the category of general intelligence.

**Follow-up and Training.**—Careful selection and placement of personnel should be supplemented by a comprehensive pro-

gram of follow-up and training. Since the present methods of selecting workers are not infallible, considerable emphasis is being placed on the close supervision of the worker after he has been selected for the job, with the idea of ascertaining, by watching him in action, those fine points of his technical and intellectual ability which were not brought out by the tests but which have an important bearing on his fitness for the work and his willingness to cooperate. Such information is especially desirable concerning the men who are being prepared for executive positions. The follow-up, in some cases accompanied by transfer of the worker from place to place in the organization with a view to determining in what respect he shows the highest degree of efficiency, gives additional data which are invaluable in finally fitting the man to the job.

But in the emphasis upon follow-up and training, the importance of scientific initial selection must not be overlooked. In practically every case, the individual needs training to enable him adequately to fill his position in the organization. But at best training is expensive, and, unless the individual is carefully selected in the first place, it will also be highly wasteful. Predetermination, in so far as possible, of a man's capacity and his natural aptitude, is the basis for determining the type of training which he is to receive.

**Developing Executives.**—The advisability of developing men from within the organization to fill positions of an executive character, in opposition to selecting outside men for this purpose, has for some time been a controversial point. It is now quite widely conceded that the training of men already in the organization is one of the most productive means of building up a strong personnel force. While vacancies in the lower ranks of the organization must be filled from outside, this is not true of the administrative and executive positions. An adequate training program develops a force of capable men available for filling the major and minor executive positions.

The plan of developing executives from within the concern offers numerous advantages which cannot be secured in selecting men from the outside. In the first place, bringing men up from within the organization enables the development of just that desirable type of executive who possesses the special qualities



and the particular viewpoint desired by the concern. It is practically impossible, except in rare cases, to find such a man on the outside. The individual who comes "from the bottom up" in the organization is thoroughly imbued with its policies and cognizant of its methods, having received his training along the definite lines designated by the concern. He is unhampered by the necessity of "unlearning" old methods which he may have developed for himself or picked up in some other organization.

In the second place, promotion from within the concern offers an incentive which awakens ambition and stimulates effort. The introduction of outside men over the heads of those who have already been employed for some time, however, breaks down morale, discourages hope of advancement, and increases labor turnover.

In the third place, the management can be reasonably sure that a man who has shown ability in one position, provided that he has been given the proper opportunity to develop by learning the work ahead of him, will also be capable of handling still greater authority and responsibility. He has a background of intimate knowledge of the policies and methods of the concern that an outsider, no matter how well trained, cannot possibly have. In following out the inside promotion plan the danger of making "misfits" through unwise promotion of men from the line must be carefully avoided. The man who lacks the leadership or directive ability requisite to a high executive position, for example, should not be promoted to the status of department head, even though, up to that point, he may have shown remarkable ability. Neither should the man who actually has potential executive ability be put in a position of this type until he has been fitted for it by training. In order to guard against such a contingency, there must be within the organization means for consistent education and training of employees.

**Training Program.**—The training program must be carefully formulated and established with a view to bringing out and developing individual qualities. It is not enough that someone in authority determine, on the basis of his own experience, what the training should be. The matter is one for careful scientific investigation. The same method of training is not applicable in all ranks of the organization; the training of an executive and



the training of a worker are considerably different in character. The idea is to make the training program comprehensive, so that it will take into consideration the needs of all classes of men in the concern.

*The Understudy Plan.*—In the training of executives, numerous organizations have found the understudy plan effective. Where the executive has an understudy capable of taking over his authority and responsibility he is left free to devote his time to the larger problems of his position. Furthermore, should any circumstances necessitate his absence or withdrawal from the business, the operation of the organization is not interrupted. The understudy, coming as he does in direct contact with the executive, has an unparalleled opportunity to acquire the viewpoint of his chief, and to learn his methods of procedure. A danger to be avoided in carrying out this plan is that the executive may become so dependent upon the assistance of the understudy that he overlooks, either unconsciously or purposely, the latter's qualifications for advancement.

*The Three-position Plan.*—A method which can be more generally used in the organization, and which is instrumental in getting men to fit themselves for higher positions, is the well-known three-position plan of promotion, which considers each man as occupying three positions in the organization, namely: the one which he has last occupied, where he acts as a teacher of those now learning the work; the one which he now occupies, where he is in charge of the work and has the additional duty of teaching it to the men below him; and the position he is next to occupy, where he is a learner from the man above him. This plan presupposes the establishment of definite lines of promotion along which the employees can progress as they become fitted for advancement.

*General Training.*—The large number of workers in subordinate positions necessitates the use of more inclusive methods in their training. This training is more often received through such mediums as continuation schools, apprentice schools, vestibule schools, training departments, corporation schools, etc., or, in the smaller organizations, by means of classes in subjects of special value to the workers. These classes are supplemented by the training received through the instruction and supervision of foremen, bosses, and similar officials. Some concerns, also,

still find the individual apprentice method successful in training the younger worker.

**Vocational Guidance.**—The most significant work of all is the training of the individual *before* he actually enters the business field. Vocational guidance for the group which is to become the working force of tomorrow, and technical training of this group along the lines directed by the vocational research, beginning even as far back as the grammar and high schools, would lift from the shoulders of the organization itself much of its responsibility in placing men, and would eliminate a great deal of waste involved in training individuals in work for which they are not suited. The present emphasis upon vocational guidance and technical training of the prospective worker is an encouraging indication that society is gradually realizing its responsibility to him, and is recognizing that it cannot leave the task of determining his life work and his training in that work, to chance, or to the executive who does not realize the magnitude of the problem and, even if he does, has no adequate means of solving it. If the ideal state of getting every man in the right place is ever to be attained, management must have the cooperation and assistance of these agencies, which will, by their preparatory work, pave the way for intelligent selection and placement.

## CHAPTER IV

### THE FOURTH FUNDAMENTAL OF BUSINESS ORGANIZATION : DIRECTION

An organization, no matter how perfectly conceived and manned, is useless without a directing force to put it in motion and keep it in motion. The framework of the organization, scientifically constructed though it may be, is in itself but a static element. The individuals of which the organization is composed possess the potential energy that can produce motion in the structure, but the utilization of that energy is dependent upon the existence of a directive factor which will release it and make it available in the form of concerted action. Direction is a fundamental of organization—the fourth of the basic factors which must be embodied in the structure of any successful business. The very existence of the business, as well as its success, depends upon direction. Without it there can be no organization, since this requires the presence, within the concern itself, of some means for coordinating the energy of each individual and directing it along predetermined paths toward the accomplishment of a common end, a definite objective.

A group of individuals without a directive force is like an engine without an engineer. Each part is in readiness for action, but the agency which will initiate that action and guide the engine is lacking. Before any results can be secured and even before there can be any organization, there must be direction to establish an objective for the concern and to determine the methods by which it is to be reached; to start the concern in motion toward that objective; and to keep it operating along the lines established.

Direction is the factor which governs the conduct of the whole organization. It is the source of all decisions, the origin of all judgments. It is the force which combats the inherent inertia of the organization and insures its constant progress toward the desired goal. A preliminary impulse to start the organization on the right path will not give sufficient momentum

to keep it always moving along that path. Except in times of dangerous prosperity, business is an uphill grind, and the organization needs the constant stimulation of new ideas afforded by adequate direction to prevent it from falling behind in the race for efficient operation. Direction impels the business continually forward and upward, obtaining for it the benefit of each new development in the field and keeping it out of the rut of old and inefficient methods.

**Scope and Significance of Direction.**—The term “direction” is definite in scope and significance. It includes all those factors which determine the type of action that the organization is to take. The important consideration is not so much the general character of direction as it is the elements of which direction is composed. All direction must originate with those who are in charge of the business, and, in the last analysis, all the directive factors can be traced back to them or to their subordinates. These executives direct the organization not by virtue of inspiration or inherent knowledge, but by virtue of their ability to render correct decisions concerning matters of a directive character—which tend to guide the business along certain lines. These decisions constitute the major part of direction, and their validity, from an organization standpoint, depends upon the care with which they are made. But direction also includes other directive factors of a more or less permanent character, whose worth is likewise measured by the accuracy of the aforementioned decisions, upon the basis of which they have been established. Foremost among these factors are the policies, which map out the course that the business is to follow. Supplementing the policies are the standard practices—the factors which designate the best methods and means of operation under certain conditions. Still another set of directive factors is embodied in the only safe means of transmitting decisions to those who are to carry them out, *i.e.*, written instructions. So it is that direction, although primarily concerned with the rendering of decisions, also comprises those semi-permanent factors which analysis, common sense, and experience have proved to be most effective in directing the operation of an organization in which centralized supervision is impossible.

**Lack of Emphasis on Directive Planning.**—Analysis of numerous operating concerns has shown that in a majority of cases

there is not enough emphasis on *direction*. Too much attention is given to doing, and too little to directive planning. The idea of activity, merely for the sake of activity, has become an obsession, obscuring the fact that it is not sufficient for the organization to operate, regardless of the manner of operation. Too often those in charge of the business have failed to direct it toward a definite objective and to establish in advance, clearly thought-out methods for reaching that objective, but have allowed it to operate from day to day using whatever means seemed to be the best, irrespective of whether they actually were the best or of their influence on the future of the business. It is this overemphasis on doing, this overstressing of action at the expense of planning, that has taken from direction its most valuable element—the formulation of decisions on the basis of concrete facts, carefully segregated, evaluated, and correlated into a definite plan of action.

**Methods of Formulating Decisions.**—The mere attempt to plan ahead is not enough. The use of a definite method in that planning, in the formulation of decisions, whether they concern the determination of the purpose and aim of the business or only the settlement of some minor problem of technique, is also essential. The current methods of making decisions differ widely; the decisions themselves vary in worth according to the way in which they are formulated. Some are made on a snap judgment basis, some on a common-sense basis, and others on a scientific basis. The snap judgment, based merely on casual information, personal experience, and intuition, comes from the individual who is now generally known as the rule-of-thumb man. The common-sense decision, based on general experience and obvious facts, comes from the so-called practical man. The scientific decision, the only one which is really effective, comes from the executive who bases his judgments on fact and reasoning and not merely on intuition or experience.

*Rule-of-thumb.*—The decisions of the rule-of-thumb man are the least satisfactory in that they are more liable to represent old and inefficient ideas than they are to be in accordance with modern practices. They too often advocate the use of wasteful and costly methods, simply because the experience of the executive in question has been limited to those particular methods.



The rule-of-thumb man, failing to recognize that there are certain basic principles which hold true for every organization, considers his business unique and consequently does not profit by the experience of other concerns. Moreover, although he makes his decisions almost solely on the basis of his own past experience, he usually keeps no permanent record of that experience and is consequently dependent upon memory alone to reproduce the circumstances which he desires to consider. Always ultra-conservative, he hesitates to make any decision which will alter the established "habit" of operation in his organization, and, as a result, fails to take advantage of the increased stock of new knowledge in his field.

*Practical.*—The decisions of the practical man are dangerous, for while they are made on the basis of experience, like those of the rule-of-thumb man, they lack the conservative tendencies of the latter. The practical man is ready to profit by the experience of others and to accept the opinions of those whom he classifies as successful men, but he is not willing to analyze this experience and advice for the purpose of applying it intelligently to his own business, to reason out just what would be the best course of action for him to take on the basis of his findings. He adopts the methods and means which others have developed and uses them in his organization with little regard for its peculiar characteristics. Like the rule-of-thumb man, he ordinarily preserves no record of his findings and so cannot correlate them into a logical basis for judgment. His decisions too often follow the line of least resistance, and are made with respect to the expediency of the moment rather than with reference to their ultimate effect on the business.

*Scientific.*—The only really safe and efficient way to make decisions is to base them on definite and complete knowledge, and to arrive at them by utilizing the scientific method. This involves certain definite steps which facilitate the solution of the problem confronting the executive. The first step is the adoption of an impersonal attitude toward the situation in hand. As long as the executive allows personal preferences or prejudices to enter into his consideration of the problem, his judgment will be biased and his decisions one-sided. Open-mindedness is the prime requisite to the rendering of equitable decisions. The

second step consists of the division of the problem into its constituent parts, and the individual analysis of each of these parts. While the tendency of some individuals is to look at a problem as a whole, and to be appalled by its complexity, this segregation of the various phases will in itself often clarify the situation and remove the difficulties in the way of final solution of the problem. The third step comprises the collection, classification, and analysis of all available data relating to the problem. This gives the executive a comprehensive knowledge of all the pertinent facts, and brings out the significant relationships between them. The fourth step involves the drawing of conclusions on the basis of the foregoing data. It is in this final decision that the preservation of the impartial attitude is most essential. The executive must not restrict the basis of his conclusions to his own experience and ideas, but must be ready to utilize information from other sources as well. Only by the possession and evaluation of *all* the facts—which is the essence of the scientific method—can reliable conclusions be reached.

There arise, in the daily operation of every organization, problems requiring immediate solution, where the necessity of rapid decision precludes the formal use of the scientific method in the manner described. Although these problems may be of only temporary importance, their adequate solution is nevertheless essential to the efficiency of the concern. It is therefore advisable for the executive to reduce his work to routine, as far as possible, by completely organizing the detail involved in it, so that he will be almost automatically supplied with the information which will enable him to employ the scientific method in formulating his decisions. The man who has been trained in the use of the scientific method, and who is in possession of the necessary information, will unconsciously use this method in solving his problems, weighing the actual facts instead of basing his conclusions entirely on conjecture.

Concerning the problems of a semi-permanent character, such as the selection of policies or the establishment of standard practices, which are continually involved in the regular operation of the business, decisions should be made only after a thorough analysis of all facts pertinent to each individual phase of the

problem at hand—after a complete application of the scientific method. These decisions have a tremendous influence on the success or failure of the business, since they determine the factors which are to direct operation over long periods of time, *i.e.*, which designate the methods of operation. This makes it imperative to exercise the utmost care in their formulation, the necessary analysis being made possible by the length of time available for the purpose. The value of the directive factors established by these decisions depends not only upon their immediate effectiveness but also upon the duration of their usefulness. Their definiteness and stability provide a foundation for the temporary decisions which must be made from day to day, and, consequently, if they are in a state of constant change or uncertainty they will be of little use. It is essential that the policies and the standard practices be basically sound, so that any changes which are required will be the result, not of a realization that the best methods or the best practices were not selected, but of economic change or improvement in business technique.

**Policies as Directive Factors.**—The directive force exerted by policies was discussed in Chap. I, in which it was stated that, "Policies are fact-founded directives and controls, and should furnish not only a definite goal for the business, but also a definite plan for reaching that goal." The general, major, and departmental policies, by establishing the purpose of the business, the principles according to which it is to operate, and, to a certain extent, the methods to be used in that operation, play a vital part in the direction of the organization. They are the most stable and permanent manifestations of direction, and as such, furnish the keynote for all the other directive decisions—they are the major directives which coordinate all the other directive factors. Policies outline the course of action which the business is to follow, and direct, not by establishing detailed rules of procedure but by providing a basis for further decisions and by placing certain limitations on the rendering of those decisions. They designate the type and kind of method to be used instead of stating the exact details of the method itself. Even the departmental policies will but rarely embody any of the standard practices. The direction exercised by the policies is general and inclusive, rather than specialized and individual.

**Impossibility of Personal Direction in a Large Organization.—**

But policies, although comprehensive, cannot be so detailed as to provide sufficient direction for all the operating activities of the concern, nor can those who direct the whole organization, or even one of its departments, personally supervise and direct all the operators within the fields over which they have control. To detect inefficiencies, to decide upon short notice the way in which each particular task should be performed, and to show each individual operator how to do his work in this way, would require unlimited time and a familiarity with detail that would virtually preclude consideration of more important matters by the executive. In any but the very small organization, the complexity of operation and the number of workers employed prohibit comprehensive personal direction. The result has been, in many cases, a neglect of detail management which has led to inefficiency and lack of uniformity in operation and output. To avoid this condition, it has been necessary to simplify direction and to make it more definite by standardizing decisions to the greatest possible extent, not only through definite and stable policies but also by adopting certain methods and means which are standard in all operation. When a single worker made an entire article for custom trade, it may have been advisable to let him choose his own materials, his own tools, and his own methods. But modern production for a market demands a uniformity and a low cost that can be secured only by planning the work in advance and by using consistently those definite methods, materials, and equipment which have been decided upon as being of greatest value. The big problem today is to get back the advantages attendant on the personal direction of operation, but to get them through the modern channels of standardized procedure.

**Standard Practices.**—While in the business world standard practices are casually regarded as a novelty, closer scrutiny reveals that they are as old as civilization. The whole progress of civilization is, in a large measure, attributable to the development and maintenance of standards. Only by the transmission, from generation to generation, of those practices and those methods which had been found by experience to be the best was



any advance made possible. Without the accumulation of this knowledge, each generation would have been faced with the same problems and forced to develop its own standards from its own experience, probably getting no farther ahead in its struggle than did the preceding generation. As long as the transfer of standards which had been formulated was dependent upon personal contact, progress was slow and uncertain and much that had already been discovered was lost. Transfusion of ideas was limited and there was little basis for enlightening comparisons of technique. It was the development of the press, enabling as it did the accurate preservation and transmission of ideas and records, that paved the way for rapid advance. In industry, a repetition of the same process of development occurred. As long as each individual business kept secret the standard practices which it had developed, the progress of industry as a whole was retarded. Since the efficiency of the methods in different concerns could not be compared, individual experience offered the only road to improvement. As industry developed a broader vision, however, the resulting cooperation provided an opportunity for the combination and comparison of knowledge and experience that gave a tremendous impetus to the establishment of more efficient standards. The keynote of modern business is the attempt to discover the most effective method of performing every task within the organization, and to establish that method as standard.

**Definition.**—The term “standard,” in relation to the business organization, permits of relatively precise definition. A standard is a method or means which has been decided on as the best that can be devised for accomplishing a certain task under existing conditions, and established as the model to which subsequent performance of that task must conform.<sup>1</sup> Standards do not refer to methods alone. They apply equally to men, to materials, to machines, and equipment: they apply, in short, to every factor and phase of operation. The method of making an

<sup>1</sup> HATHAWAY, H. K. defines a standard as “*That which is set up as a form, type, example, or combination of conditions accepted as correct; a criterion, established as a result of scientific investigation.*” He goes on to state that because of constant advance and improvement it is necessary to add “*for the time being,*” or “*representing the present stage in the development of the art.*” “Standards,” *Bulletin of the Taylor Society*, vol. 5, pp. 12-13.



article cannot be standardized unless the specifications for that article are standard; the specifications cannot be standard unless the materials, and the machinery and tools used in working on the materials, are also standard. Wherever the factors involved are of a repetitive or of a semi-permanent character, standardization is virtually indispensable. In the operation of the average organization, there are innumerable matters whose constant recurrence makes it essential to decide upon some one definite way of handling them, no matter whether they are in the office or in the foundry. The absurdity of making a daily decision concerning the method to be followed in routing orders, the material to be used in making a certain type of machine part, or the process to be employed in the manufacture of that part, is obvious. Such decisions, embodying the practice which has been found to be the best possible, considering the purpose in view, will be made but once, and will thereafter be established as standard for the concern.

**Improvement of Standard Practices.**—This does not imply that standard practices are rigid and resistant to change. The establishment of a certain method as the standard way of performing a function in no sense precludes improvement in that method. One of the most fundamental ideas in the formulation and maintenance of standards is that there is a constant search for a *better* way of doing things. No standard, although it may have been the best practice at the time of its original establishment, is proof against changing conditions. It would be extremely unwise to maintain any standard as a permanent and immutable criterion of performance, owing to the danger of obsolescence. While the task to be accomplished may remain the same, improvements in technique and equipment, changes in materials, etc., often revolutionize operation to such an extent that the established method is rendered practically worthless in comparison with the newer and better practices which have been made available. Accordingly, it becomes essential to use new methods in applying old principles.

On the strength of this necessity for the constant revision and renewal of standard practices, many executives contend that it is not worth while to establish them in the first place. But there is a fundamental fallacy in the reasoning of these executives

which completely vitiates their argument, *i.e.*, that without the initial adoption of standards, there would be no basis for improvement. In the absence of a definite practice with which to compare the proposed method, it would be impossible to judge its value with any degree of accuracy. An established standard of some sort is prerequisite to the formulation of a better standard.

Although an established standard is a stimulus rather than an obstacle to improvement, it provides a necessary check on change in the methods already in use. If experience has shown that a particular standard is fitted to produce satisfactory results in a certain case, it is manifestly inadvisable to alter that standard arbitrarily, simply for the sake of change, or to condemn it on the basis of insufficient evidence. Even before changing a standard which is not directing operation effectively, it is essential to determine whether the fault lies with the practice itself or with those who are enforcing it. In any case, revision of a standard should be undertaken only after an investigation of conditions as thorough as that which preceded its initial establishment. Otherwise, a change may mean deterioration rather than improvement of the standard.

**Adherence to Standard Practices.**—In spite of the fact that standards are always more or less in a state of flux, they must be rigidly adhered to while in force. If not, their whole benefit is lost. A standard represents the best practice possible under the existing circumstances and as such merits painstaking observance of its direction. There is little value in establishing a standard practice unless that practice is consistently employed in the field of operation to which it refers. Were each operator allowed to do his work according to his own ideas, in all probability each would use a somewhat different method, with two undesirable results: (1) a lack of uniformity in performance, some workers using the best methods and others using inferior methods, with an accompanying hindrance to operation through friction and discord; (2) a corresponding lack of uniformity in output, the inevitable consequence being injury to the reputation of the concern on the market. The public, when it buys goods under a special name or trademark, demands uniformity in these goods; any deviation from standard causes dissatisfaction. In order to secure this desired uniformity, the use of the established stand-

ards must be absolute for the time being and must be consistent throughout the particular fields to which they apply.

**Standard Practices and Standards of Performance.**—Owing to an unfortunately similar terminology, standards, or standard practices, are often confused with standards of performance. The two conceptions, although they have a certain relation to each other, are quite distinct and pertain to two different phases of organization. A standard practice is a directive factor which guides operation: a standard of performance is a control element which is used in measuring the efficiency of that operation. A standard practice is an actuality, a method or means already in use in the operation of the organization; while a standard of performance is something to be attained, a goal set to be reached by operation. For example, the standard practice is the method which the operator actually employs in doing his work, while the standard of performance is the amount or quality of output which it has been estimated that he should produce by using that particular method.

Standard practices and standards of performance are related in that the establishment of standard practices is prerequisite to the establishment of accurate standards of performance, which in their turn are essential in maintaining effective control. Unless standard methods and means are used in accomplishing a task, it is impossible to predetermine exactly the amount of time, the quantity of material, or the amount of labor required in the process. Without standards, consequently, there is no basis for estimating the capacity of any division of the organization, or even of an individual worker. The management can do little more than guess at what to expect from the various departments and the various operators. Any attempt to establish standards of performance under these conditions would almost undoubtedly result either in unfair demands or in underestimation of capacity.

**Standard Practices and Policies.**—As standard practices exercise control over standards of performance, so do policies exercise control over standard practices. The latter, based as they are on the policies, must necessarily be in accord with them and determined by their provisions. After the policies have outlined the nature of the work to be done, standards get results

by telling exactly how to do that work; and by thus furnishing the detailed direction which is essential to the maintenance of the policies and the continued use of the best methods, these standards become effective in operation.

**Value of Standards.**—By providing this detailed direction, standards are of great value both to the management and to the workers. The establishment of standard practices of operation removes from the shoulders of executives the burden of continually deciding questions concerned in the detail work of their subordinates, by making such work routine. All the information which the worker needs concerning the method that he is to follow or the materials and equipment that he is to use, is embodied in the standard practices and can be conveyed to him by means of written standard practice instructions. The executive is left free to devote his time to the enforcement of the standard practices, to the instruction of the operators in their actual use, and to personal supervision of execution. The existence of definite standard practices not only facilitates instruction by furnishing an exact method which can be taught to the worker, but also makes supervision effective by providing the executive with a definite means of checking performance.

Standard practices, moreover, make it possible to secure the full benefit of the brains in the organization. By using these brains to plan all the details of the work in advance, a definite procedure is developed by those in the organization most capable of formulating it—a procedure which the operator can follow without having to decide for himself how to do each particular task. The average operator does not possess sufficient knowledge and experience to enable him to formulate, at least within the short time allowed him, a method of performance which can be truthfully called the “best.” An established standard solves his problem quickly and effectively.

**Effect of Standardization on the Worker.**—Regarding the effect of standardization on the worker as an individual there is still considerable discussion and conflicting opinion as to whether it is, in the main, harmful or beneficial to him. The chief argument advanced against standards is that they reduce the task of the worker to a purely mechanical operation, making no demand upon his ability to think and affording him no oppor-



tunity to exercise his initiative. This argument, however, cannot be accepted without question. While it is true that the worker who performs the same operation day after day in exactly the same manner becomes so familiar with it that the process grows almost habitual and requires little or no thought to effect its completion, it does not necessarily follow that there is no *opportunity* for thought or for the exercise of initiative connected with the task. If the worker really has ability, his intimate knowledge of every factor involved in the standard practice will place him in a position to make constructive suggestions as to possible improvements in it. While he may not possess the ability to formulate the original standard, the established practice gives him a basis on which to work, and his constant use of it may enable him to discover advisable changes which can be scientifically analyzed and developed by those who are expert in the formulation of standards.

It must be admitted that standardization places little premium on brains, and that the ability of the exceptional worker is not made evident where standard practices are used. But this disadvantage is possibly outweighed by the advantage that standards allow the average worker to perform tasks which were formerly above the level of his skill. Standardization of methods, materials, and equipment has so simplified operation that it has facilitated the transfer of numerous workers from the category of laborers to that of machine operators. Standardization cannot make poor workmen into good ones, but it can enable the average worker to make better use of his abilities, thus getting considerably increased results with the same amount of effort by using only the best methods. In view of the foregoing considerations, it would seem that standards are more beneficial than harmful to the worker. There is always a demand for brains and for exceptional skill. The men who possess these advantages and the accompanying initiative essential to their effective utilization need not remain in positions where the degree of standardization prevents the full exercise of their abilities. If it is free play for initiative which is desired, herein lies a valuable opportunity to exercise it.

**Determination of Standard Practices.**—The management is responsible for the determination of the standard practices:



the workers are responsible for their proper execution. The too common practice of leaving to the worker the selection of his own tools and methods of operation has proved a dismal failure in modern large-scale production, where innumerable organization factors must be coordinated, and where uniformity of product at a low cost is necessary.

Standards of some kind are found in practically every business, but they differ radically both in the method of their selection and in their serviceability. In some businesses, the practices have been merely picked up and have become standard through habitual use, no conscious thought having been given to their formulation. They may be the result of the careless selection of a practice by the management, in order to meet an immediate need, or of the chance adoption of a method by the operators in the absence of definite instructions. They are, in any case, the result of the gradual settling of operation into grooves which have been unwittingly carved out by continued use, rather than the product of conscious and premeditated direction of activity into definite channels. Even standards of this type, if recognized and followed consistently, are of value in that they insure the uniformity of operation which is so essential to the organization. Except in rare cases, however, they have little merit save that of consistency, being comparable to the snap judgments of the rule-of-thumb executive, and no more reliable.

Something of an improvement over these standards is that type which has been formulated by the manager on the basis of experience which seemed to indicate that some one particular method was better than another. But individual experience is often dangerous unless correlated by trained observers. These standards, like the decisions of the "practical" executive, are based on appearances rather than on analysis of the actual facts. The resulting uniformity of practice and elimination of confusion in operation are desirable, but this "hit or miss" method of establishing standards is, on the whole, uncertain and unsatisfactory. But in the small or medium-sized business, where the possibilities of a complete scientific analysis are usually limited, it is better to have standards formulated on the basis of experience alone than it is to have none at all. Such standards may even be quite serviceable, since in these concerns there is more oppor-

tunity for personal direction and supervision, and the one who formulated the standard can give considerable attention to its execution. But in the large organization, where there is little opportunity for personal direction and where standards must operate almost entirely on their own merits, the scientific method is the only safe one to use in establishing standard practices.

There is a great difference between the standard that represents nothing more than a "habit" which has gradually become the established method of performance, or the one that represents merely experience, and the standard that embodies what has been scientifically determined to be the best possible method under the circumstances. The success of the whole organization may depend upon the realization of this difference. Among all the possible methods and means which can be used in performing a task, there is one which is best suited to the existing conditions; this should be established as the standard. Only a complete scientific study, made by executives who are in possession of all the facts, or by specialists employed for the purpose, is adequate to determine this best way. It is not enough to *think* that a method is the best or to establish it as such on a foundation of theory alone. Unless a thorough investigation precedes the designation of a method or means as the standard, there can be no certainty that only the best practices are being used.

**Establishment of Scientific Standards.**—In the scientific establishment of a standard, there are certain definite steps which must be taken. The first is the determination of the reason for establishing the standard. What is the purpose governing its formulation? What relation has it to the rest of operation? Precise knowledge of the result which it is desired to accomplish is essential to the investigation of ways and means for securing that result.

The next step is the determination of the developments which have already taken place in the field to which the standard applies and the practices which are in use at the present time. The important thing is to find out what the business is actually using in men, methods, machinery, and materials, and why it has adopted these particular standards. Investigation of past experience, of the concern making the study and of other similar concerns, will show wherein certain usages have failed and others

have succeeded. Investigation of existing conditions will indicate the extent to which present practice has taken advantage of this past experience, how far it has thrown off the shackles of habit and tradition by adopting only the desirable features of the old methods and means, and rejecting those which are undesirable.

In making this investigation, it is essential not only to obtain *all* the facts pertinent to the problem in hand, in order to prevent false assurances, erroneous conclusions, and dangerous experimentation, but also to draw these facts from an analysis of actual operation. This will insure the formulation of workable standard practices. For example, it may be determined that a certain kind of material is the most suitable for use in a particular manufacturing process. But if this material is not available, that which is most nearly like it and which *can* be obtained necessarily must be used in its place as the standard. This probably will necessitate a change in the process of working on the material, and, consequently, will also have a bearing on the determination of the standard method. It is the existence of limiting factors such as these which renders impossible the formulation of standards on a purely theoretical basis, and necessitates the investigation of actual operation in order to adapt the method to the conditions prevailing within the organization.

The foregoing study, involving as it does a careful scrutiny of every detail of operation, results in the collection of comprehensive data relating to the operation of the organization and brings to light the parts of the work which are being done poorly—makes evident any ill-defined, slipshod methods which, through carelessness or ignorance, have been allowed to survive. On the basis of this information, the third step can be taken. This consists of the elimination of what is actually wrong in present practice and the classification of the remaining facts so as to show their essential relationships.

There now remains but the final step—the correlation of these facts into the most efficient standard practices. This requires consideration both of the immediate conditions pertaining to the job which any particular standard is designed to direct and of the relation between the standard in question and all the other standards with which it comes in contact. The standard prac-

tices as a whole must form a coordinated group, and not consist of a scattered collection of unrelated units. Standards formulated by the scientific method—on the basis of practical facts, scientifically analyzed and coordinated—will embody the best practices as developed from past experience and present knowledge.

**Responsibility for the Establishment of Standards.**—Responsibility for the establishment of standards varies with the size of the business. In the small concern, it is usually necessary for the manager, with the assistance of his workers, to select the standard practices to be used. In this case the standards, although not scientifically determined, at least provide a definite and uniform method of procedure. But whereas in the small business there is, as previously stated, an opportunity for close personal direction and supervision of the execution of the standard practices, there is ordinarily no one person definitely responsible for their maintenance, with the consequence that even the workers who helped to formulate them often become lax in their observance. This is especially true when the standard practices are not put into written form, in which case deterioration is almost inevitable. Such a result can be avoided only by close attention of the manager to the execution of the established standards.

In the medium-sized concern, a consulting engineer may be employed to make a real study of the organization before any standards are formulated, the manager and the workers then developing the standard practices in conference with him, on the basis of the information brought to light by the study. The employment of a specialist of this type to act as a member of the consulting staff brings into the organization the coordinated knowledge gathered from studies of a number of concerns, and secures for the business the benefit of wide experience with standard practices. If, in the business of medium size, there is a man who has been trained in the work and who is familiar with the best methods, he should be allowed to take charge of the establishment of the standard practices, since he can supervise their enforcement after the consulting engineer leaves. If a good consultant has been employed and the standard practices still produce unsatisfactory results, the usual cause is either that the



standards, although consistently used, are never changed to meet new conditions or that they are not observed in operation. Where there is an individual continually attending to the maintenance of the standard practices, this neglect will be prevented.

In the large organization, which offers the greatest opportunity for standardization, the establishment of standards should be handled by specialists in every division of the organization. In some of the more progressive concerns, whole departments, containing men expert in the various fields and thoroughly familiar with the development of standard practices, are devoted to this work. In the production division, for example, there will be a specialist in charge of standards or a standards department to decide on those practices which are to be used throughout all phases of the work in that division. The same will hold true for the sales division, and for what is usually classed under the head of general administration. This centralization of the formulation of standards in each department is necessary in order to secure unity and coordination in operation.

Furthermore, these specialists and departments, like the single individual in the medium-sized organization, fill the need for having someone continually responsible for the maintenance of the standards. Too many business men think that, once a comprehensive set of standard practices has been established, the work of standardization is complete and permanent. It is just as essential to have someone constantly watching to see whether the standards are securing the results expected of them, and whether it is possible to make any improvements in the established practices, as it is to have them scientifically determined in the first place. Otherwise, the business probably will settle into a rut, its executive assuming that the standards so carefully established should be good enough to remain unchanged, while as a matter of fact they are often far from perfect. The function of those who are responsible for the maintenance of the standard practices is to build up only to replace, to improve upon their own improvements.

The complete and accurate standardization of the whole organization requires an enormous amount of time and effort. Results obtained too quickly will probably be discarded with equal rapidity. To formulate the most efficient standards,

there must be men who can devote their whole time to study and analysis of the problems of operation. They must attack these problems deliberately and logically, first outlining their purpose and their plan of action, and then following that outline until the work of standardization is completed. The haphazard establishment of standards here and there throughout the organization may be of some benefit, but this benefit is small compared to the simplification of operation and the increase in efficiency secured by the deliberate and scientific formulation of a comprehensive and coordinated set of standard practices.

**Written Instructions as Directive Factors.**—Instructions provide the medium through which the force of all the other directive factors is exercised. Regardless of how accurate the decisions of the executives, or how well-conceived the policies and the standards, without instructions they are ineffective and incapable of directing the organization. Their full value will not be realized unless the instructions reach the operator in an exact and intelligible form. Failure of the worker to understand the instructions which are given to him is one of the most common sources of trouble in the organization. Friction, and waste of time, materials, and effort are the inevitable results of the misunderstanding which causes incorrect execution of orders. When the worker knows exactly what to do and how to do it these difficulties will not be encountered. To be effective, direction must travel from its source to its objective without change or modification. This result can be accomplished in but one way—by the use of written instructions.

**Oral versus Written Instructions.**—This does not imply that every order issued within the organization should be written out and delivered to the person who is to execute it. Such a procedure would justify the contention that the use of written instructions results in needless red tape, whereas, if properly practised, it greatly facilitates and simplifies operation. In fact, the greater part of the orders in the concern probably will be given orally, since in most cases the issuance of written instructions would be an unnecessary waste of time and trouble. Where the task to be done is simple in character, where it is not closely related to other tasks (that is, where it is not part of a regular

sequence of operations), or where part of the planning is left to the operator, the instructions will usually be oral. For example, the final instruction from the foreman to the worker, except where standard practice instructions are used, in a majority of cases will be delivered orally by the foreman himself.

**Limitations of Oral Instructions.**—The limitations to which oral instructions are subject, however, make it advisable to issue orders in written form wherever practicable. One of the chief defects in oral instructions is that they are often inaccurately transmitted and are consequently misinterpreted. The average individual is incapable of giving an oral order which will convey his exact wishes to another. Having in his own mind a clear conception of what he wants done, he usually fails to give proper consideration to the expression of the order, and as a result often employs a loose phraseology which does not make a distinct impression on the one whom he is attempting to direct. The operator, in consequence, may place an interpretation on the order which causes his execution of it to vary considerably from the original idea. It is exceptional to find a man who can so clearly give an oral instruction for work which is at all complicated as to get just the results which he wants. Where the instruction must pass by word of mouth between several persons, the danger of misinterpretation is greatly magnified as the number increases. Experiments in the army during the war proved the inaccuracy and inefficiency of oral orders. It was found that men of average intelligence could not receive and transmit such orders correctly, even under ideal conditions. The conditions prevailing in the business organization make oral transfer still more difficult. This difficulty of transmission is also partly due to the fact that oral instructions, to be correctly understood, must be even more definite and more clearly emphasized than written instructions, since, in a majority of cases, the worker will grasp an order which is in writing more quickly than one which he must remember simply from hearing it.

In addition, there is the danger that the worker may not understand or may forget the order even when it is communicated to him in such a clearly intelligible form that it can be definitely executed. Where even a simple order must be shouted to the operator who is working in the midst of noise and constant

activity, there is always the chance that it will be misunderstood, due to the conditions under which it is given. Furthermore, the operator is usually already occupied, so that the necessity of keeping two or three orders in his mind at the same time is liable to overtax his retentive powers, causing him to confuse the orders or to forget essential details. The difficulty of retaining oral instructions is another of their outstanding weaknesses.

The complexity of the orders issued in the average concern makes the general use of oral instructions impracticable. An order as originally issued, for example, may affect several departments. It must, consequently, be sent to all of these departments, and ordinarily must be divided at least once more within the department, so that its various parts may be transmitted to the different groups or individuals concerned in its execution. The difficulty of treating an oral order in this way is obvious. In a majority of cases, the final instructions to the operator would be both incomplete and incorrect. The uniformity of the original order having been lost in the many steps of the transmission, the execution of its parts would consequently lack the coordination which is essential to effective fulfilment of the whole purpose. If the order is of a routine character and its requirements are already familiar to those who are to execute it, it can be fairly complex and still be issued orally, as, for example, when it concerns the manufacture of a standardized product for stock. But even in this case a written order is preferable, if for no other purpose than to provide a definite record of its issuance.

**Orders Which Should Be Written.**—There are two main classes of orders which should be written: (1) those which have to do with the coordination and planning of the work involved in immediate operation; and (2) those which give instructions for carrying out the established standard practices.

**Administrative and Executive Orders.**—The first class includes orders coming from the central office and orders from all those who are not in actual contact with the execution of the work; that is, all administrative and executive officers except the foremen. It comprises orders concerning any work, other than that of a standardized and routine character, which must be performed in the organization, provided this work is not so simple and individualistic as to make unnecessary written expression of



the instructions for its execution. These orders take the form of communications between departments and executives, executive orders, schedules of work, etc., the detail involved being dependent upon the character of the task to be performed. The consideration underlying the writing of these orders is that any one order is not an end in itself, to be executed regardless of all others which may have been issued. Its purpose is the direction of the work toward a common end, in the accomplishment of which numerous other orders are involved. All orders, consequently, must be issued in such a manner that the same uniformity and correlation embodied in their original form will be preserved in their execution. This can be done only when the instructions for their performance are written. Written instructions insure execution in accordance with the order as originally issued, and cause the flow of work between departments, as well as within departments, to be smooth and regular, in spite of the fact that different parts of that work may be performed by widely separated groups or individuals. The written order, by designating exactly when and how certain work should be done, can establish a definite procedure of operations which will eliminate friction and interruption to the progress of that work through the concern. Without definite written orders, it is practically impossible to secure coordinated execution of work which has been planned in advance.

**Standard Practice Instructions.**—The second class of orders which should be written is composed of standard practice instructions. These instructions consist of written reproductions of the standard practices which have been developed for the organization, and should give all the details of the standards which they are designed to express. The issuance of written standard practice instructions direct to the worker is the only way to insure his strict adherence to the details of the practices. Otherwise, he will tend to drift into the use of his own, instead of the established methods, regardless of the oral directions of his foreman.

Two factors must be considered, however, before deciding to issue written standard practice instructions direct to the operator himself. These are: the possibility of completely planning and standardizing the work in advance, and the type of

labor which is to carry out that work. In some concerns, for example, the character of the work is such that it cannot be planned completely before the order is issued, and the details of its execution must consequently be left for determination by the foreman. In this case, the written instruction usually will go only as far as the foreman, who can then instruct the operator orally, or perhaps pass on the instructions with additional oral information. To issue an incomplete order direct to the operator over the head of the foreman, and to leave to the former the responsibility of completing the planning of the work, would destroy the authority of the foreman and cause inevitable dissension. In contemplating the issuance of written standard practice instructions direct to the workers, it is also necessary to consider the type of workers who are to execute these instructions. A comparatively high grade of labor is required to read, understand, and follow a written order. In concerns employing unskilled and illiterate labor their direct use is practically impossible. For example, it would be ridiculous to issue written instructions to the operators in a textile mill, a large percentage of whom are foreign born and unable to read English. In such a case, the order must go first to the foreman, who can then transmit it to the operators in a form which they are able to understand.

**Why Written Instructions Are Necessary to Facilitate Operation.**—Written instructions, by providing a definite and accurate means of communication between those who plan the work and those who execute their orders, play an important part in the facilitation of operation. Their use in the organization is essential both to obtain coordination and continuity of work, with accuracy and uniformity of result, and to make possible the utilization, to best advantage, of the wide experience and superior knowledge of those who plan and direct the work.

*To Coordinate Action.*—Written instructions, when *centrally* issued, provide the only satisfactory method of coordinating action in operation. They bind together the efforts of all those in the organization, acting as a directive force which cannot be easily misinterpreted or disregarded. Their strength lies in the fact that once written instructions have been issued, responsibility has been definitely placed.

*To Secure Continuity of Work.*—Written instructions also contribute perhaps more than any other factor to continuity of work. Where operation is entirely dependent upon oral instructions from executives, there is apt to be considerable loss of time and interruption in operation because the executive is not always on hand to tell the operators what to do. If the operator who has finished one job has no schedule of work in definite form, and no written standard practice instructions, he rarely knows what his next task is to be or how to accomplish it. He must wait for instructions from his executive. If the latter happens to be gone when the job is completed, the time until his return is wasted or occupied with the performance of some unimportant task, to the neglect of more pressing work. The issuance by the executive of advance orders in written form, or the formulation by a central or departmental planning office of written order of work schedules, eliminates this difficulty. Furthermore, written standard practice instructions, by putting the established standards in a form easily available to the operator, enable him to keep at his work without having to wait for the foreman to give him personal instruction concerning each job.

*To Insure Accuracy of Work.*—Written instructions are the most effective means of insuring accuracy and uniformity in the execution of orders. Without written instructions and without the maintenance of a definite record of orders and standard practices, it is practically impossible to get accuracy of performance. The order which is delivered orally is too often not completely explained and the worker is too apt to forget or to disregard it, disclaiming responsibility on the ground that he was not fully instructed, to insure proper adherence to its details. Written instructions, moreover, obviate the necessity of relying on the memory of executives or workers to retain, intact as to detail, the orders and standard practices which are of a more or less permanent character. This is but an uncertain method, because, although the old employee who is thoroughly familiar with the instructions may be able to execute them accurately and to pass them on to other workers with a fair degree of exactitude, when he leaves there is a danger that there will be no one in the organization who can reproduce or execute these precise instructions. It is not enough, therefore, especially in the case

of standard practices, to "remember" the details of procedure. The established standard should be recorded in written form and made available for the use of the worker at all times. Where the standard practices or the standard practice instructions are recorded there is little chance for the impromptu changes which are otherwise sure to occur.

*To Insure Uniformity of Work.*—The preservation of a permanent record of orders and instructions also insures uniformity of work throughout the concern. As long as the original instructions are on file for reference, there can be no argument concerning the orders or the method of their execution. The way in which the work is performed will not depend upon the personal interpretation of the order by the executive in charge of the work, as it would in case the order was issued orally. All the workers in the organization who are to execute the same task will receive exactly the same instructions, regardless of how widely separated these workers may be, or how much time has elapsed since work of that type was last performed. The uniformity obtained by the use of written instructions is not a condition which prevails only during the performance of a certain piece of work. Once the instructions have been recorded, they may be referred to whenever the necessity for performing that work recurs. Furthermore, in the concern in which different departments, or different plants, perform the same functions, written instructions are the only means of securing the desired uniformity. They can reach a large number of men at one time, giving to each the same order in exactly the same words. This is manifestly impossible where the order is issued orally to several executives. In this case, probably no two of the executives will get exactly the same impression of the order, and consequently will not convey exactly the same conception to the minds of the different individuals who are to take part in its execution. The work, as a result, will differ in character, to the detriment of the concern. For example, unless such functions as the payment of wages, the issuance of requisitions, the use of manufacturing processes, and other similar functions which are often included in the activities of all of the different departments or plants, are performed in the same way throughout the organization, the result will be controversy and hard feeling, as well as the waste of time, effort, and materials



occasioned when the work is not done according to the standard practices.

With the assistance of written standard practice instructions, satisfactory uniformity of operation may be maintained even with men who have been in the concern but a short time. Written instructions are one of the most effective aids in training new workers in established methods. Without such instructions the training of the "green" operator is much more difficult, especially if the foreman cannot devote constant attention to him. If the new worker happens to forget his original instructions and has no basis on which to work save what he is told by the foreman, he is forced to waste time or to adopt personal methods of operation. Written standard practice instructions avoid this difficulty and greatly facilitate the effective training of the new man in the work of the organization.

*To Utilize the Knowledge and Experience of Experts.*—Finally, written instructions are the only means by which the organization can get the full directive benefit of the knowledge and experience of the experts who are already in the concern or who are brought in for a particular purpose. These men cannot personally direct the operation of all the workers according to the plans and methods which they have developed. Neither can these plans and methods be orally transmitted to the workers without danger that their original value may be impaired by incorrect transmission and interpretation. The only satisfactory process is to preserve the exact instruction of the specialist in written form, so that it can be referred to at any time.

**Effect of Written Instructions on the Worker.**—Written instructions, like standards, have been attacked on the basis that they kill the initiative of the worker and restrict his opportunity for independent judgment. The same opposing argument as that used in the case of standards may be used to combat this attack, namely, that written instructions, rather than stifling initiative, stimulate it by affording a definite basis on which to work. Even if the contention were true, it would be highly impractical to abolish the use of written instructions simply for the benefit of those few workers who do possess the initiative to map out a satisfactory plan of action, when a majority need instruction in all the details of their work and can be given this

instruction most adequately in written form. Written instructions are so necessary to the maximum efficiency of the concern that it would take a criticism much more serious, and of more definitely established validity than this, to cause them to be discarded.

**Preparation and Issuance of Written Instructions.**—The most essential factor in providing adequate written instructions is that some regular procedure for their preparation, approval, and issuance be established. In no other way can the instructions be kept uniform and consistent and the issuance of unnecessary or conflicting directions be avoided. Usually, unless such a plan is adopted, the work of preparing the instructions either will be neglected or will be assumed by too many individuals, the volume of written orders becoming so great as to cause duplication and contradiction in the instructions. Where such a condition exists, the inevitable result is confusion and disregard of the orders issued.

The responsibility for the formulation of the necessary written instructions varies with the nature of the concern. In the average organization, it is obvious that one man cannot prepare the written instructions for every division. The executives directing and controlling the various departments naturally will formulate the executive orders which go out over their signatures to their subordinates. The planning department, or the individuals who perform its functions in the organization, should prepare all the necessary instructions concerning work to be performed, and should also send out standard practice instructions, based upon the records filed in their office. The latter are usually prepared by those who determine the original standard practices, since they are the ones who have the most complete knowledge of the standards. For example, if the executive in charge of each division is responsible for the development of the standard practices for that division, he will also have charge of the formulation of the written standard practice instructions. In this case, it is advisable that the instructions be subject to the review of the general manager or some other official before being issued, in order to avoid the danger of duplication or conflict accompanying an uncentralized method of preparation. Whatever the plan adopted, however, it is essential that it provide:

(1) for the careful formulation of the written instructions by capable and definitely responsible individuals, on the basis of full and accurate information; (2) for the issuance of these instructions over the signature of some one high in authority; and, (3) where necessary, for their coordination by centralized review. Some concerns insist that all standard practice instructions be signed by the general manager, no matter who formulates them or whether or not they affect more than one department.

**The Standard Practice Manual.**—To be of full benefit to the organization, the written instructions must be preserved in a form convenient for future use, so that they will be readily available to the executives and to the workers. In the case of executive orders, which are less numerous and less frequently in demand for reference during operation than are the standard practice instructions, it probably will be sufficient for the executive himself to keep a record of them on file. For preserving the standard practice instructions, which must be constantly referred to, the method most commonly used is to embody them in a manual, copies of which are kept in the different departments. The development of this manual will be gradual, progressing as new standard practices are developed and instructions for them are formulated. The original compilation of the manual may be handled by a committee, or by several committees within the concern, or by outside specialists in the work assisted by a staff official from the organization.

As new standard practices are established to supplant those which become obsolete, the instructions embodied in the manual must also change, so that it can be kept strictly up to date at all times. In order to facilitate this revision, many concerns use a loose-leaf record system, issuing all instructions in uniform style on sheets which can be easily inserted in the various copies of the manual throughout the organization. In this way new instructions can be promptly transmitted to executives and to workers, the old instructions being cancelled or entirely removed from their manuals. After the manual has once been installed in the concern, the work of keeping it up to date can be handled by one individual. He should keep not only a record of all the new standard practice instructions issued, but also a complete file of those which have been superseded.

**Introducing a System of Written Instructions.**—For the concern which has not previously made use of written instructions, the introduction of a system of written orders and of the written standard practice manual may present difficulties unless the cooperation of every member of the organization is secured. It is, therefore, essential to explain in advance the purpose of the written instructions and then to introduce their use gradually, in this way making it possible to overcome any opposition. The success of written instructions largely depends upon the care and tact with which they are developed and maintained in the organization, since this determines the attitude of the workers toward them. The purpose of written instructions can be fulfilled only when they are carefully adhered to: only then will their full directive force be exercised. For this reason, it is advisable to check up on the different members of the organization from time to time, in order to see that they are conforming to the instructions which have been issued to them. This can be done easily, since, when the operator has once received the instruction, he is definitely responsible for the performance of his work according to all the details of that instruction. By affording a basis for judging the operation of each individual in this way, written instructions make supervision effective, as well as providing one of the most powerful directive factors in the organization.

**System as an Aid to Direction.**—The ultimate success of direction, the effectiveness of all the directive factors, is to a great extent dependent upon the existence of system within the concern—upon the logical organization of detail so that it will flow smoothly in well-cut channels, and will require attention only when a change is required or when some channel becomes obstructed. The development of such a system presupposes the orderly arrangement of all the details of the work being performed into a logical relationship that can be reduced to routine, in this way making the progress of detail almost automatic. It implies the establishment of a definite plan of operation, that is, a system which will facilitate the methodical and regular handling of detail matters without special consideration being given to them.

The chief danger in systematizing detail is of placing too much emphasis on the system and too little on the parts of which



it is composed. A system is merely an orderly arrangement of parts. The system itself may be excellent as far as its structure is concerned, yet be a miserable failure in practical operation, simply because of weakness in the parts composing it. These must be basically sound before the arrangement, no matter how carefully determined, will be effective. Direction, through policies, standards, and written instructions, supplies the necessary attention to the various parts of the system. The two are thus closely interwoven. Direction is not exercised by the system itself, but travels through the channels provided by it. System must be supplemented by the planning which accompanies direction, but it provides the medium through which this planning is put into effect. Although an efficient system will not serve as a substitute for direction nor compensate for the lack of it in the organization, it will render direction more effective and give it an essential unity which otherwise it could not attain.

## CHAPTER V

### THE FIFTH FUNDAMENTAL OF BUSINESS ORGANIZATION : SUPERVISION

Supervision constitutes the indispensable complement of direction. Just as the power of an engine must be harnessed, and the consumption of that power regulated in order to utilize to the full the potentiality of the engine, the exercise of direction must be supplemented by the regulatory control of supervision. While direction supplies the motive force that stimulates all the parts of the organization into action, supervision, acting as the governor, insures the efficient application of that motive force along predetermined lines. The purpose of direction is consummated through supervision.

Wherever there is a group of people whose collective energies are to be utilized in the accomplishment of a definite purpose, supervision becomes essential. Without supervision, organization is impossible, for supervision is a fundamental prerequisite to the accomplishment of collective results. Direction can plan the work; only supervision can insure its proper execution. Supervision is the factor which analyzes and interprets direction, which sees that the policies, executive orders, standard practices, and written instructions are actually followed in operation.

Supervision, unlike the other fundamentals, does not permit of exact definition. It becomes evident only after the organization is actually functioning. Even then it is not possible to place a finger on any specific condition in the organization and say with certainty: "This is the result of supervision." Nor, in a majority of cases, is it possible to point out any part of the organization structure and say: "This is the provision which has been made for supervision." Supervision is so subtly interwoven in the fabric of the organization that it cannot be separated for detached scrutiny. Intangible, yet powerful, it exercises a regulative force over every phase of operation. Although productive of no measurable results, it is indispensable in all the activities of the

organization, and its absence is fatal to the existence of the business.

**Development of the Need for Supervision.**—Ever since business outgrew the one-man stage, supervision has been an essential factor. In the one-man concern, where the master did all his own work, there was obviously no need for supervision. But when an apprentice was taken on it became necessary for the master to instruct him and to supervise his work. Since then, parallel with the increasing complexity and division of labor that have characterized the development of industry, the need for supervision has steadily grown. As demand for his products increased and the master added to his working force, it became impossible for him both to plan the work and to supervise the performance of his men; he was forced to have some one to help him in carrying out this function. As these simple business units—they can hardly be called forms of organization—gave way to the more complicated establishments which developed with the introduction of machinery, the manager became more and more dependent upon the assistance of others in supervising the details of operation. Complexity of operation made the need for supervision more acute, and the increasing size of the units widened its scope and called for a larger number of persons to share its responsibility.

To a greater or less degree, some form of supervision is present in every organization. It is impossible to conceive of a concern in which those in charge of operation pay no attention to the work of the individuals under their direction save to tell them what to do and how to do it. There is in practically every case some attempt to put the directive factors into operation. To be effective, however, supervision must be complete and comprehensive. Consequently, in the modern large-scale organization, with its many departments and its multitude of workers, adequate performance of the function of supervision is an enormous task. Supervision must be exercised over every factor in the organization—over men, product, plant, and processes—and especially over the human element.

**Personal and Impersonal Supervision.**—Personal supervision is exercised almost automatically over all the men in the concern, from the general manager, who is supervised by the presi-

dent and the board of directors, down to the worker, who is supervised by his foreman or boss. Each individual in the organization who possesses any authority and responsibility personally supervises the work of those under him. Since he is responsible for the results of their efforts, he wishes those results to be satisfactory, so that those who are supervising him will, in turn, be satisfied with his work. This personal supervision, regulating as it does by direct contact the operation of every member of the concern, is the most effective factor in keeping the men "on the job."

Without the assistance of impersonal factors the task of personal supervision becomes increasingly difficult. Those who are exercising supervision need some definite basis on which to formulate their judgments, some accurate measure by which to evaluate performance. A purely personal estimate of the work done is not sufficient. To make supervision truly effective, and to enable the supervisor to secure accurate data concerning the work of his men, there must also be indirect supervisory factors—policies, standards, schedules of work, and written instructions—against which he can check their performance. The concern in which these factors are lacking is preeminently the one which requires the strictest personal supervision, yet it is the one in which adequate supervision is most difficult to secure. One man, provided with the exact knowledge of what is to be done and how it is to be done furnished by the indirect supervisory factors, can intelligently supervise the execution of functions which otherwise would require the attention of several individuals. For he needs only to see that the work is done in the correct way, not to determine what that correct way is—a requirement which would considerably confine the scope of his activity.

**Connection between Supervision and Direction.**—Policies, standards, schedules, and written instructions, in the exact sense, do not supervise, but direct; yet through them direction and supervision are indissolubly connected. Neither direction nor supervision is complete without them: they are the substance of one and the foundation of the other. Supervision in itself contains no element of planning the work, *i.e.*, of determining what principles and methods are the best to follow in operation.



Direction must perform this function through the provision of the aforementioned directive factors. These factors somewhat lessen the need for supervision in the organization, but they cannot in themselves insure operation according to the principles and methods which they embody. Supervision is required to see that every man and every machine in the organization produces maximum result with minimum effort by doing their assigned work as directed.

Only when properly supervised will the members of the organization most surely and quickly perform their work in accordance with the methods and means which have been formulated for accomplishing the definite purpose of the business. Low efficiency on the part of the men in an organization is not necessarily due to their indolence or carelessness—even the best workers will be hampered by being compelled to operate under adverse conditions. Each member of a group may be conscientious in his work, may be willing to cooperate. This alone will not produce satisfactory results. It does not lie within the power of the average individual in the organization so to perform his work, without assistance, that it will exactly coordinate with that of all the other individuals with whom he is associated. Supervision is the factor which must do this for him.

Direction can show each member of the organization the lines which his efforts should follow, but even after direction has done its work, the binding force of supervision is necessary to insure collective action toward a common end. Supervision takes the threads of activity which have been made uniform by direction and weaves them into a strong and even fabric of operation. Only supervision can bind these threads into the well-defined and regular pattern which direction has drawn.

Only supervision can check the too common tendency of the individuals in an organization to deviate from the policies and standard practices of that organization and from the orders and instructions which have been given to them. Without supervision the "best methods" would tend to die out. Certain practices, by becoming habitual to the worker, lose their significance for him, so that he forgets their importance. This is true in the case of instructions. If these directive factors are put in writing, they will not be entirely lost sight of. But the employee who

becomes accustomed to receiving his instructions in written form, even though he is aware that they outline the way in which his work *should* be done, may gradually come to disregard them, at first only in minor details but soon in more important respects. A continuance of departure from these established methods will eventually defeat their purpose. Although this deviation may be both unconscious and involuntary—either the result of having drifted away from the guidance of the directive factors or of having failed to appreciate their finer points—it, nevertheless, destroys the unity of action which is necessary to the life of the organization. Supervision supplies the means by which the details of the directive factors are made clear and by which continued action in accordance with these details is insured.

Through careful supervision it is often possible to effect improvements in the directive factors. The purpose of supervision is not to condemn immediately any innovation on the part of the worker—any departure from the detail of the established practices—but to discriminate between those changes in method which are voluntary and desirable, and those which are involuntary and undesirable. Often the operator, through his close contact with the work, discovers changes in practice which upon investigation prove to be worthwhile, either in saving of time, materials, etc., or in lessening the necessary effort, thus making possible the elimination of hitherto unseen inefficiencies in operation. It is part of the function of supervision to be on the lookout for faulty practices, and by giving recognition to the remedies which they have devised, to enlist the cooperation of the workers in correcting them. Improvement of method should not be purely a matter of chance, but should receive the consistent attention of those who supervise the work and of those who execute it.

**Difference between Supervision and Inspection.**—Supervision, contrary to a prevalent conception, is not synonymous with inspection. The significance of these two terms is characteristically different. *Inspection* is little more than an attempt to eliminate defective products. It is comparable to a remedy designed to rehabilitate the patient whose health has already been undermined by disease. *Supervision* acts as a preventive measure. It does not wait until the damage has been done

and then try to remedy it, but seeks, by constant vigilance, to prevent untoward developments by bringing to light and eliminating those factors that are liable to cause trouble. If supervision could be made perfect, there would be no further need for inspection.

Supervision is to be construed neither as an attempt to "police" the organization, nor as a factor purely critical in character. Its attitude is rather one of cooperation and assistance. The aim of supervision is to watch over the performance of work, not with the idea of arbitrarily picking flaws in the execution of that work by the employee, but for the purpose of constructively criticizing operation, thereby enabling the employee to obtain the best possible results from his expenditure of time and effort. Ideal supervision would instil in the supervised the desire to do his work in the most efficient manner, not the desire to "put something over" on the supervisor.

**Value of Supervision.**—The presence of adequate supervision is of inestimable value to the business. Through the mere fact of its existence, supervision increases efficiency by assisting in the maintenance of discipline in the organization. The average working force, contrary to the opinion of some individuals, is not in active opposition to the management and does not require constant watching to insure continued operation. It is true, however, that many employees tend to lag and grow careless about their work unless they are aware that the management has made some provision for ascertaining just how they are discharging their responsibilities. Though the idea of supervision is not primarily one of discipline, the knowledge that there is a competent supervisory force does serve, incidentally, to prevent the development of this negligent attitude on the part of the workers. Thus adequate supervision provides an impetus to increased productivity of labor within the organization.

This productivity can be attributed, at least in part, to the added incentive which supervision gives to the worker. When the employee realizes that his work is being carefully supervised, he knows that any outstanding ability on his part will be immediately recognized. The impression which he makes on the super-

visor and which the supervisor in turn conveys to the higher officials is entirely dependent upon the worker's own efforts. It is only natural, therefore, that he should exert himself to the utmost in performing his work, especially when he has before him the possibility of promotion. To secure the wholehearted cooperation of the workers solely for the good of the organization, when there is no definite additional advantage accruing to them personally, is a difficult matter. The amount of supervision necessary to achieve this end, if it could be achieved at all, would be enormous. Where supervision provides the opportunity to benefit himself as well as the concern, the average worker is strongly inclined to take advantage of that opportunity.

Supervision further contributes to the efficiency of the organization by facilitating the proper placement of personnel. As explained in Chap. III, the science of personnel placement has not yet advanced to the point where it can always determine with sufficient accuracy the qualifications and characteristics of the men just entering the organization so as to place them in positions where their ability is equal to the responsibility given to them, and is fully utilized. The obvious remedy is the follow-up of these new men so that from an analysis of their actual performance may be determined the activity for which they are best suited and to which they should be transferred. Supervision provides the means for effecting this follow-up. In case a man is not performing his work satisfactorily, the close check which supervision keeps on individual operation brings to light his inefficiency and the reason for it—determines whether the fault lies with the man himself or with the equipment and processes that he is using. This information is of material assistance in eliminating “misfits.”

**How to Secure Adequate Supervision.**—The first essential to securing adequate supervision is the separation of “planning” from “doing.” This presupposes the presence of definite direction within the organization. The work should be planned in advance and standardized as completely as possible, in order that the existence of comprehensive directive factors will leave those who supervise operation free to fulfil only their proper function of seeing that the workers conform to the established



practices. The supervisor should not be burdened with the task of planning the work and formulating standard practices and instructions as well as of supervising execution.

**Separation of "Planning" and "Doing."**—In the establishment where policies, schedules, and standard practices have not been formulated, and where written instructions are not issued, "planning" and "doing" cannot be separated. They are combined in the executives and subexecutives, who are forced to choose the methods which they believe to be the best as well as to see that those under them employ these methods in operation. They act as the directive and as the supervisory factors. In practically every organization this is true of the higher executives, whose work cannot be standardized, and who consequently direct and control their subordinates and also, to a certain extent, supervise their operation. But in the organization which embodies adequate directive factors, a more definite segregation can be effected at least as far as the work of the subexecutives is concerned. The foreman, for example, while exercising in some cases a certain amount of direction and control, subordinates these functions to that of supervision, and concerns himself mainly with seeing that policies, standard practices, etc., are carried out. He does not formulate the directive factors; he only interprets them to the operators, and then watches to see that they discharge their duties in accordance with the directions given. The sales supervisor of a branch office often has no control over the sales methods to be used in his district. He concentrates his entire attention on seeing that his salesmen carry out orders in conformity with the standard practices prescribed by the home office.

**Selection of Supervisors.**—Another essential to effective supervision is the careful selection and training of those who are to act as supervisors. It may be impossible to distinguish between the organization for supervision and the organization for direction or control because they are so closely connected. It may consequently be impossible definitely to designate every individual who exercises supervision as a "supervisor." But wherever this function is performed, it should be exercised by men who are trained for the work and who possess the essentials of intelligent supervision—tact and leadership ability. Otherwise, super-

vision will become evident and obnoxious. The president and the general manager, who regulate and correlate the operation of the whole organization, should be the type of men to whose supervision their executives will respond quickly. Likewise, each of the executives, who is responsible for the functioning of only a part of the business, should possess the ability so to supervise the work of his subexecutives that no antagonism develops. The supervisory job of the higher executives is less difficult than that of the superintendents, the foremen, or the bosses, who must gain the cooperation of their operators. Often workers, because they lack the knowledge and breadth of outlook which would make them amenable to criticism, resent even constructive suggestions unless very tactfully offered. Those who are supervising them must be able to get the "other fellow's point of view," in order thereby to secure their goodwill. Supervision should be an inspiration, not a deterrent, and the men who are to perform the supervisory function should be selected and trained with this end in view.

**Training of Supervisors.**—It is accordingly advisable to incorporate in the training plan of the organization some provision for developing within the superintendents, foremen, and bosses the qualities which will aid them in the exercise of supervision. This provision may take the form of classes or conferences in charge of a competent executive, preferably a personnel expert. Such meetings provide an opportunity for the discussion of subjects pertinent to supervision, such as type and characteristics of workers and methods of maintaining discipline, stimulating continued effort, and developing cooperation and goodwill. To these classes or conferences the superintendent, foreman, or boss can bring the problems which he encounters in his work, and receive assistance in their solution. This will materially increase his ability adequately to supervise the men under him.

**Adequacy of Supervision.**—The adequacy of supervision is measured not only by its quality, but also by its quantity—by the amount of supervision which exists in the organization. It is obviously impossible to expect one man to supervise effectively the operation of a large number of individuals. The smaller the number, the more satisfactory will be his supervision of their work. As was brought out in the chapter on "Function-

alization," if in non-routine work there can be a gradual stepping down of functions and authority and if in routine work there can be a foreman or boss for every group which contains as many as ten men, the efficiency of the organization will be materially increased by the possibility of close supervision.

It is not a matter of great difficulty to secure adequate supervision in the average organization. The necessity for emphasis on this fundamental of organization is due to the fact that many managers, perhaps mistaking simplicity for unimportance, have failed to give to supervision sufficient attention. After developing stable policies, installing modern processes and equipment, functionalizing the concern, selecting the personnel with care, and developing definite directives, they have neglected the factor which would clinch the whole—supervision. Supervision is an indispensable adjunct to direction and control; it is the coordinator, the caretaker of the whole organization. Without its constant vigilance inefficiencies creep in unnoticed; personnel lacks the regulative force that would make its operation completely unified and harmonious; and the whole organization—men, methods, and equipment—falls short of its possible accomplishment. Supervision is the positive, yet intangible force which binds together every part of the organization.

## CHAPTER VI

### THE SIXTH FUNDAMENTAL OF BUSINESS ORGANIZATION: CONTROL

The stability and progress, even the very life of a business, depend upon the intelligent decisions of its head. To make such decisions he must possess a comprehensive knowledge of the activities of the various departments based on information concerning the work they are doing. The size and complexity of the average modern organization prevents its head from giving his direct, personal attention to all its parts, and so the need for an adequate impersonal system of control becomes imperative.

**Definition.**—Control is that fundamental of organization which comprises the means of providing the manager and the executives of an organization with continuous, prompt, and accurate information concerning the efficiency of operation, what the business is doing, what it has done in the past, and what it can be expected to do in the future. A system of control collects the details of operation, segregates them, combines them, and classifies them into a form suitable for use. Paradoxically, it permits the manager to maintain his grasp on the reins of the business and, at the same time, to hand them over to others. Without stepping from his proper field of general direction, the manager may so manipulate the operation of every division of the concern as to keep these divisions as nearly as possible in proper relationship to each other, and this without coming in contact with actual execution. The control system emphasizes weaknesses and defects which indicate a departure from proper and efficient conditions, and by its vigilance guards against the development of minor faults into aggravated problems. In short, it is a measure of success or failure and of the value of the methods and means which the business employs.

**Elements of Control.**—Control involves three principal elements: forecasting of results; recording of results; and placement of responsibility for results. A retrospective system of control,



from which all forecasting or planning is absent, is of little value. The first requisite of the control system is that it establish what should be as a measure of the correctness or efficiency of what is. Unless the manager and the executives know at all times how much the organization and its various departments should be accomplishing, they can neither judge the degree of their success or failure from time to time, nor make intelligent plans for the future. Without knowing that costs are excessive, they cannot reduce costs; without knowing what wastes exist they cannot eliminate them; and without knowing that efficiency of production is low they cannot increase it. The control system makes this knowledge available by means of standards of performance and standards of costs. These standards are derived from an analytical study of records of past performance and their use makes it possible to forecast the results of future operation with almost as great a degree of accuracy as can be attained in recording those of current performance. The control system thus becomes the most valuable tool of direction.

The second requisite of the control system is that it record accurately data concerning actual performance. Adequate records are the basis for comparisons between past and estimated results by which present efficiency may be determined. These records are transmitted to the officials of the organization, and furnish to each those data which are essential to the intelligent direction of his work. Furthermore, control reduces the detailed knowledge from every part of the concern into concise but comprehensive statements for the use of the chief executive, thus enabling him to visualize the organization as a whole without concerning himself with unnecessary detail.

But the provision of these records of operation and the standards of performance against which to measure them contributes little to increasing the efficiency of the concern unless certain individuals are made accountable for the accomplishment of the established standards. Consequently, the third requisite of the control system is the placement of definite responsibility on the heads of all those divisions or departments for which a standard of performance has been estimated. This insures careful attention to all variations from the standard and an investigation of their causes, with a view to effecting those

changes or improvements which will make possible the attainment of the standard.

In order to fulfil these requirements, the mechanism of control necessarily varies according to the particular characteristics of different businesses. For each organization there will be different standards of performance, different standard costs, different records, and different divisions of responsibility. But the principles remain constant. The essential thing is to synchronize the elements of the system with the requirements of the organization to which it is applied.

**Relation of Control to Direction and Supervision.**—The control system is at once the basis and the supplement of direction and supervision—the basis in that it provides the information from which directive decisions are formulated, and the supplement in that it furnishes the data necessary for accurately appraising the efficacy of the methods and means which direction has developed and supervision has put into practice. Direction can map out the course which the business is to take, and can devise methods to be employed in following that course. Supervision can insure adherence to these methods. But only a system of control can provide a means of measuring the efficiency of the results obtained. It is neither the means of establishing policies, practices, and instructions, nor the means of ascertaining whether the operation of the business is in accordance with them; these are the tasks of direction and supervision. Control, however, does provide the criterion by which to gage the worth of these factors. Control is like direction in that it looks ahead; it differs from direction in that it forecasts results rather than plans the methods to be used in obtaining those results. Like supervision, control aims to secure maximum results with a minimum of effort from every part of the organization. But unlike supervision, it does so by measuring the results attained by the methods employed, rather than by enforcing any particular practices.

**Possibilities of a System of Control.**—The need for a system of control in the modern organization is so outstanding, the present-day manager is so obviously hampered without it, that there seems to be little necessity for advancing arguments in its

favor. But there are a number of executives who fail to realize the extent of its possibilities, and the really imperative need for making the most effective use of those possibilities. A statement of some of the more general and significant advantages of an adequate system of control may serve to give an idea of its importance in any organization.

**Intelligent Direction of Decentralized Execution.**—Primary among the services rendered by the control system is the provision of a means by which the manager can direct intelligently that operation with which he is no longer in direct contact. The scope of the duties involved in the direction of the modern organization prohibits the assumption of the whole burden by the manager. In any concern of more than a few men, whose activities are numerous, part of his responsibility must be delegated to others. It is manifestly impossible for the manager to keep in touch with the work of each operator or of each machine in the shop, of each salesman on the road, of each clerk in the accounting department, and so on throughout the organization. He cannot personally direct and watch their operation—this must be left to others. Yet there must be some factor which will bring him into contact, not with the actual execution itself, but with the facts that relate to that execution. A system of control, properly installed and administered, makes possible the accomplishment of this object. Through its channels, which come to a head in the general manager, flow the data which enable him to visualize the conditions existing in every part of the organization, and, on the basis of this definite information, to coordinate the activities of the entire concern.

Even without an adequate system of control, the manager will undoubtedly receive a certain amount of information concerning the detail work of the departments. He may get by word of mouth from his superintendents or his department heads reports as to the results being obtained by their divisions and how these results compare with those previously attained. But the average manager is unable to retain such information in sufficient detail and with sufficient accuracy to allow him to use it as a basis for his judgments and to correlate it into a plan of action for his organization. His direction, in such a case, is bound to be intuitive rather than scientific. He has

no assurance that the data which he has secured are complete, or that he has selected those which are directly related to the problems confronting him. But where adequate control exists, the manager is supplied with condensed reports of operation, formulated on the basis of scientifically kept records. Those facts and relationships which have been found significant for his use in directing the business are segregated or formulated for him, and presented in such a way as to enable him to grasp their content in the shortest possible time without being compelled personally either to make an attempt at watching operation or to go through pages of detailed reports containing perhaps thousands of figures.

**Organization Balance.**—A system of control enables the manager to keep the organization in balance. The fundamental idea of balance is the preservation of harmony between all the various activities of the business. Control accomplishes this end by eliminating the two principal causes of lack of balance, *i.e.*, neglect of an essential part of the business, and overemphasis on some one part. The comprehensive reports from every division of the organization not only bring each phase of operation to the manager's notice, but also emphasize especially any one in which results are unsatisfactory and which requires particular attention. Furthermore, the control system, by placing upon facts their proper values and by grouping the information from all departments into its proper relationship, prevents the manager from devoting too much time to some relatively unimportant problem. The manager who attempts to run his organization by personal and unsystematized methods is prone to concentrate his attention on those details which happen to come to his immediate notice, and to disregard those which are less evident but perhaps infinitely more important.

**Predetermination of Profits.**—Modern developments in control have demonstrated the fallacy of the old idea that profit or loss was to be expected in the usual course of the business and could not be anticipated or altered. They have shown that profits can be estimated in advance and intelligently regulated as to amount. The current practice is to determine, from the facts of past and present operation, what future profits should be under certain conditions, and then, in case the actual profits vary



from the estimated profits, to investigate the reason for the discrepancy with a view to its prompt correction and the subsequent attainment of the standard. This predetermination of profits provides the information needed by the management in deciding which of its lines to emphasize and what selling price to put on its various products. It is also of inestimable value, is in fact prerequisite to the formulation of a financial program for the concern.

**Detection of Weak Spots in Operation.**—The control system makes possible an accurate check on all phases of the business. It thus enables the manager to detect weak spots in operation and to strengthen them before they have developed into more serious problems and have caused an appreciable loss to the concern. Control points out pitfalls before they are reached and enables precautionary or preventive measures to be taken. Without such a system, it is often impossible to foresee future difficulties quickly enough to avoid their disastrous consequences. With it, the slightest increase in cost or decrease in production, the smallest waste, cannot for long remain concealed from the management. The control system also reveals the sources of these weaknesses. If the increase in cost has occurred in the sales department, the records of control place it there with unerring accuracy. If the waste has been due to negligence in the shop, this is likewise made apparent. Each undesirable factor is accurately located, so that its elimination or modification is possible.

**Indication of Business Trend.**—In addition to revealing minute developments within the organization, the control system correlates these detailed factors and indicates the course being taken by the business as a whole, *i.e.*, shows whether the trend of the business is backward or forward. The manager who lacks the definite knowledge provided by a control system may think that because he is still making a profit the business is safe, while as a matter of fact it may be on the way to bankruptcy. The downward process is often so gradual as to escape notice until a condition has been reached that is too serious to be remedied. Many basically sound concerns have failed for the simple reason that their managers have been unaware of the exact nature of the changes taking place in their organizations.

These failures have often been attributed to "overexpansion," "insufficiency of working capital," etc., which may perhaps be the immediate and apparent occasion but not the real reasons for the collapse. Underlying them there is usually found as the root of the difficulty, lack of information concerning the operation of the business, *i.e.*, lack of an adequate control system.

How can a manager successfully regulate the finances of his organization unless he knows not only the exact amount of his working capital, but also the demands which are to be made upon it in the future? How can he be expected to curtail credit at the proper time unless he has reliable information concerning his accounts receivable—information which warns him that these accounts are accumulating unduly and that the imminence of a period of stagnation necessitates caution in order to maintain a sufficiency of available working capital? His only means of getting this information is through the records provided by a system of control. The opportunity for increased profits, especially during the war, led to overexpansion on the part of many concerns, with the result that the greater part of their capital was tied up in fixed assets and was not available for use when the volume of business decreased and the curtailment of revenue from current operation made it necessary to obtain working capital elsewhere. An adequate system of control would have prevented this "tie-up" by showing the manager the condition toward which his business was tending.

But the control system does not confine its warnings to financial matters, as the foregoing statement might seem to indicate. It provides equally useful data with respect to the efficiency of every division of the business. And, since the financial condition of the organization is dependent upon the foregoing factors, the control system makes it possible, through its analysis of them, to forecast financial changes and to augment or forestall their effect. A control system is, briefly, the barometer of the development or the decay of the business.

**Responsibility of Management.**—The foregoing services have made the presence of a system of control in the organization indispensable to present-day management. Modern business places the major portion of the responsibility for success upon the shoulders of the management—it makes management the

most vital factor in attaining that success. Labor and capital, while essential, are both ineffective until coordinated by management. On the one hand, management is a guide which directs the efforts of labor into the channels of greatest benefit to itself and to the business. On the other hand, it is to a certain extent a trust, holding the funds supplied to it by those who have invested in the concern, and applying these funds to the best advantage of the organization and the stockholders. In order to discharge these obligations satisfactorily, management needs the assistance of *facts*—definite and comprehensive data which only the control system can supply. Possessed of this knowledge, management occupies the position of an intelligent teacher and director of labor, and of an efficient agent for the use of the capital of the investors. Without it, this position degenerates into little more than that of a driver of labor and a gambler with money. Management's position in the organization must be made impregnable, and control is the element by which this end is to be achieved.

**Types of Control.**—The degree of control existing in modern organizations is largely in proportion to the realization by such organizations of the necessity for control. Incredible as it may seem, all sorts of control systems exist at the present time, varying from that of an almost primitive character which was found when business organizations as such first began to develop, to that which is encountered in the most progressive and scientifically managed concern.

**Personal Control.**—There are still many organizations, especially those whose size is as yet not sufficient to make personal direction wholly ineffective, in which no adequate system of control has been developed. The manager depends exclusively upon his own ingenuity, shrewdness, and ability in conducting the affairs of the business; he keeps no records of its performance and has no standards by which to judge its efficiency. Problems are settled in the best way which presents itself to the manager when he is immediately confronted with them. No attempt is made at forestalling difficulties or at planning work ahead. An organization can exist under such conditions only when it is small, when there is no rigorous competition, and when no

unfavorable circumstances arise to disturb the course of the business. Such personal control on the part of a manager affords no basis of collected facts concerning the business which may be of service in aiding him to meet emergencies.

**Record Control.**—The manager who keeps records of his transactions, even though he does it merely as a matter of form, has progressed a step farther toward control. But since he collects these records with no particular purpose in mind and makes no use of them other than to review what the business has done, their value is limited. Even though they may be grouped into a financial statement, their character remains purely historical, indicating only the condition of the business as a whole at the time the statement was compiled. The manager has a slightly firmer basis for future operations, but is afforded no real control.

**Elements of a Scientific System of Control.**—Complete control can be secured only when there is a scientific system which provides for the forecasting of results, the recording of results, and the definite placement of responsibility for results. The elements of control included in the forecasting mechanism are standards of performance, standard costs, and operating schedules. These elements predetermine the level of efficiency which it is possible for the business to attain. The recording mechanism includes reports of operation and costs provided to the manager and the executives. These reports, when measured against the standards of performance, standard costs, and schedules of operation, gauge the actual efficiency of the business. The definite allocation of responsibility for results requires no separate mechanism; it is secured by establishing the standards of performance and standard costs according to the divisions of authority and responsibility existing within the concern and by formulating the system of reports on this same basis. In the organization which is well functionalized this involves little difficulty.

**Standards of Performance.**—Standards of performance, the first element of the forecasting mechanism, establish a level of efficiency which past experience and analysis have shown the business to be capable of reaching and maintaining. They are built upon a scientific basis of cause and effect, *i.e.*, that a certain



combination of factors and conditions will give a certain result which can be repeated as long as those factors and conditions remain the same. Herein lies the possibility of predicting results which gives validity to standards of performance. Changes in conditions are inevitable, but these may be recognized and prepared for, and the standards of performance revised accordingly.

Standards of performance serve as the yardsticks of efficiency. Without them there is no way of knowing whether the organization is producing as much as it should, or where inefficiencies are reducing profits. It is the function of standards of performance to inform the management how much each man, each machine, and each department and division of the organization should do, so that the actual performance of these factors may be evaluated accordingly. There are very few business men who are not interested in raising their concerns to the highest possible level of efficiency, but there are many who try to do this without first definitely predetermining what that level is. To attempt to reach an objective without knowing what that objective is or where it is situated is obviously ridiculous. It is almost equally unreasonable to attempt the operation of a business without standards of performance. In the absence of these standards, the manager cannot know how close the parts of his organization are coming to what they should do, or how far short of it they are falling. He is working in the dark, with no definite goal in view. Efficiency is high or low only by comparison; standards of performance are necessary to afford a basis for that comparison.

**Establishment of Standards of Performance.**—In order to establish standards of performance with any degree of accuracy there must be a study of the past performance of each individual unit or department for whose future performance a standard is to be set. This means, in general, a study of what each man, each machine or group of machines, and each department has been able consistently to accomplish under existing conditions. It should be followed by a detailed analysis of all the factors which have a bearing on performance. In the production department, for instance, this would involve an analysis of such elements as working conditions, particularly with respect to convenience of layout; materials, with respect to their fitness for use in the particular processes employed; equipment and machines,

as regards condition of repair, type, etc.; methods, with respect to economy of motion and technical accuracy; grade of labor being used; and type and character of plant organization. This analysis often reveals opportunities for improvements which contribute materially to increased productivity. Standard practices should be established wherever possible, since the more fully the factors of operation can be standardized, the more accurately can the amount which should be done by any part of the organization be determined. The failure of most systems for predetermining results, and especially for predetermining costs, can be attributed not so much to any deficiency in the system itself as to the constant change in methods of operation caused by the absence of established standard practices for doing the work which the standards of performance are designed to measure.

From the information secured by the foregoing studies, equitable standards of performance can be established. Past performance, considered in relation to any improvement in conditions which may have resulted from the investigation, affords the basis upon which to estimate what future performance should be. Where no apparent possibility of immediate improvement has been found, it is often necessary simply to adopt past performance as the temporary standard, and gradually to revise this standard, *i.e.*, raise it, as the opportunity for improvement presents itself. Predetermined standards of performance are but estimates, at best. But they are estimates based on fact instead of on conjecture, and, if carefully formulated, can be established with sufficient accuracy to make them of inestimable value as a means of control. Although the standards themselves will vary with the department for which they are formulated, on account of the difference in the factors to be considered, the general procedure of establishment is the same in any case.

The study of standard establishment is still in its infancy. Concerning many of its phases little information has been obtained, not because this information is unavailable, but because the study is so new. The small amount of time which has been devoted to it is entirely out of proportion to its great importance. The task has been too large for the relatively few pioneers who have tried to pave the way, and the field still offers abundant opportunities for investigation and experimentation.

**Examples.**—Effective control demands the establishment of standards of performance for every phase of the work. The multiplicity and the complexity of these phases prohibit discussion of each individual standard, even as to the principle upon which it is based. Were this possible, it would mean that the ultimate limit of the study of performance standards had been reached. Nevertheless, the concept of standards of performance as forecasting elements may be somewhat clarified by a brief consideration of their relation to sales, production, labor, inventories, and finance, and by a few illustrations of the general type of performance standards established in these divisions.

**Sales Standards of Performance.**—The establishment of standards of performance for the sales department has recently received considerable emphasis, due to the realization that, in the average business, this department contains more serious inefficiencies than any other. The more progressive managers are now detecting and eliminating these inefficiencies in so far as possible by an analysis of their sales volume and sales costs according to lines, territories, and types of customers, and through the establishment, on this basis, of standards which are used as a measure of the results obtained according to these classifications. Analysis of the past records of the sales department shows what the sales volume has been for the various lines, territories, and types of customers, at what periods sales may be expected to increase or decrease, the reasons for these changes, and whether or not the same influences are likely to affect sales for the coming year or season. Sales quotas may be estimated with a fair degree of accuracy merely on the basis of the amount of business which has been done previously at different periods in the various territories, revised in accordance with the changes which have taken place in the conditions of the market. But the only way to secure definite information concerning present sales possibilities is by analysis of both the actual and the potential markets for the product. Quite accurate results usually can be secured in this way, since the class of people who use the product, or the conditions under which it can be used, define fairly well even the potential market.

In the case of setting standards for the sale of a new product, only the potential market can be studied; in the case of a product

already on the market, the actual in relation to the potential can be investigated. The market analysis should take into consideration the scope of the whole market as limited by the characteristics of the product and the need for it, and the various territories in that market with respect to such factors as the existing competition, character of the prospective purchasers within those territories, their purchasing power, and the various factors influencing the exercise of that power. Each product presents a different problem, so that the analysis of its market requires the investigation of different factors. But the same idea, the securing of definite market information upon which to base the sales quota, prevails. Advertising standards are also based upon the market information secured by analyses of this type, and are necessary in order to determine the results which can be expected from a projected program of advertising.

Equally as important as the establishment of sales and advertising standards is the determination of expense standards for the sales department. These will include, in general, direct selling expenses, such as advertising, collection expenses, general expenses and, in some cases, service expenses for installation of products, etc. The standards for all these expenses, with the probable exception of those under the heading of general expense, are largely formulated on the basis of the sales quotas, since their amount is closely connected with the volume of sales. The predetermination of expense is one of the most important, yet one of the most neglected, factors in selling. Sales expense cannot be controlled after it is once incurred—it must be predetermined. It is as necessary to know in advance what the cost of selling an article will be as it is to know how much of that article can be sold. Once the standards of performance for the sales department have been established, the essential thing is that they be put to practical use; *i.e.*, that the actual sales and actual expense be regularly and consistently compared with them, so that any deviation may become apparent, have its cause investigated, and if possible, be regulated by the management.

**Production Standards of Performance.**—The excellent work of industrial engineers has made it possible to set up standards for production far more accurately than for sales. Many of



the better organized concerns have established not only detailed operation, machine, and unit standards, but also divisional and departmental standards. Standards of equipment operation make possible over-all reporting of equipment idleness, which can then be analyzed for such causes as lack of work, stoppages and breakdowns, waiting for work, getting tools, waiting for instructions, etc. By disclosing these causes, operating standards make it possible to determine who is responsible for inefficiencies, and whether the fault lies with management, with labor, or both. Unit standards, such as those for the amount of material to be used in a certain product, for waste and breakage, and for power or fuel consumption, are means of controlling important sources of loss in industry. Deviations from these standards are immediately indicative of inefficiency in operation. Divisional standards, *i.e.*, standards of performance for the division as a whole, enable the production manager or the works manager to detect any slowing up of operation which is liable to prevent the accomplishment of scheduled production. The foregoing illustrate the general type of standards found in production. In this field control has reached a higher degree of accuracy than in any other; production standards can now show what should be accomplished by machines, men, equipment, tools, and divisions.

The establishment of detailed standards of performance for production requires the standardization of all the factors of operation, *i.e.*, the consistent use of standard practices throughout the production department. Otherwise, there will be no basis of established method upon which to estimate exactly how long it should take to produce each article, how much material it should take to produce each article, how much material should be consumed in the production of that article, etc. Also, as previously mentioned, continual changes in methods and conditions will render any fixed standards of performance inapplicable. But even where comprehensive standard practices have not been established, presumptive standards of performance can be established. In this case, analysis of records of past performance is the only source of information. From this analysis it is possible to determine at least what the department as a whole should do, in view of what it has done previously, and in view of

the additional improvements which have taken place to increase its productivity. Even these presumptive standards against which present performance can be measured are an advantage over an entire absence of performance standards.

**Standards of Labor Performance.**—Standards for the production department also include standards of labor performance. These have been developed to a high degree of efficiency, due primarily to the necessity for having an accurate measure of labor productivity as a foundation for the establishment of scientific wage systems. Although standards were often wrongly set, with the result that the wage system was neither scientific nor satisfactory, it was this need which gave the first impetus to the formulation of labor standards. More recently, the emphasis on planning and on the accurate determination of costs of production has given further stimulus to the measurement of labor efficiency. At the present time, through the standardization of machines, materials, methods, tools, etc., it has become possible to determine, by means of time studies, the amount of work which a man should do in a certain time under given conditions. Upon this basis standards of labor performance are established.

The development of standards for labor has undoubtedly been a tremendous factor in securing greater efficiency of performance, especially through the payment of the worker in proportion to his actual productivity. It is this latter practice which has had a tendency to speed up all phases of operation. If material is defective, if the machines and equipment need repairs, if there is any delay beyond the worker's own control, he immediately files a complaint, because such conditions hamper his ability to produce and cut down his earning capacity. But despite this increase in efficiency, the work of establishing standards of labor performance has not yet reached the limit of its possibilities. It has not been properly coordinated so as to constitute an important element of control. The serviceableness of standards of labor efficiency is not restricted to their use as a basis for the payment of wages. They can be employed to equal advantage in controlling operation, as a means of determining whether or not each man is doing as much as he should, of planning work in advance, of predetermining costs, and of bringing to light and eliminating weaknesses in perform-

ance. There should be standards for the amount of work that each individual or each group can be expected to accomplish, and also standards for idle and non-productive time, to go below which means an unwarranted increase in cost that requires investigation. Likewise, there should be standards of labor turnover according to causes, which make immediately apparent any undue instability in the working force, and may be the means of effecting a considerable saving for the concern. The establishment of standards for labor is the only satisfactory means by which management can control the human element in production.

**Standards of Inventory Maintenance.**—Proper inventory control requires the establishment of standards of inventory maintenance, and is of vital importance to both the commercial and the industrial organization. The merchandising establishment has by far the largest proportion of its capital invested in the goods which are its stock in trade. Its possibilities for profit are dependent upon the rapidity and efficiency with which it can sell those goods and renew its inventories. The industrial establishment, while it maintains its stocks in a somewhat different form, in inventories of production accessories, raw materials, and goods in process as well as finished goods, also has a large part of its capital invested in these inventories, and is faced with the necessity of controlling them so that possible wastes from shrinkage, obsolescence, or idle investment, may be avoided. The essential factor is to set inventory standards which will insure the maintenance at all times of a "balanced" inventory. The term "balanced," used in this connection, has two general meanings: one, that the inventory kept is large enough to supply the customer's demand but not so large as to slow up turnover; the other, that the proper proportion of the different kinds of materials and supplies used in the productive process is maintained in the stock on hand. The former applies primarily to a commercial establishment, or to the finished goods in a manufacturing concern, while the latter refers exclusively to a manufacturing establishment.

Over- or understocking and lack of balance in inventory are usually attributable to one of two general causes—either ignorance of the proper amount of inventory which should be kept on hand, or speculation in inventory. The latter does not neces-

sarily imply speculation for a profit in the ordinary sense of the term, although this sometimes occurs, but usually means overstocking in anticipation of rising prices. The only way to eliminate these cases is to investigate conditions of production or sales in order to obtain information on the basis of which maximum and minimum amounts for the inventory of any item can be established. In production, this can be done by determining the amount of each kind of material required in the productive process and the length of time needed to secure that material, then setting the standard amount of inventory at the point where the stock on hand will be just sufficient to maintain operation until a new supply can be secured, allowing a margin of safety for any contingencies which may arise. In merchandising, the average inventory required in each line for a certain period can be estimated from past records, by determining the relation of past inventory to past sales, and on this basis computing the normal inventory for estimated values.

After the standard or normal inventory has been established, it is necessary to keep an accurate record of present inventory in order that the two may be compared. The more frequently this comparison is made, the closer will be the control over inventories. Where there is a perpetual inventory record, the comparison can be continuous. Where the inventory must be estimated or an actual physical count made, the intervals of comparison will be to some extent determined by the difficulty of securing the information, although, even where considerable labor or expenditure is involved, frequent inventories often result in savings which more than compensate for their cost. Although most commercial establishments have necessarily given considerable attention to the maintenance of a standard balance of inventory and the maintenance of actual inventory at that standard, many industrial concerns have almost totally neglected that phase of their business. But a growing realization that materials represent cost as truly as do bank accounts is causing manufacturers to watch closely their balances of stores and to keep them as close as possible to the standards which have been found to be most effective.

**Financial Standards—Ratios.**—Business solvency is dependent upon financial balance. This can be attained only by ade-



quate financial control. Too often the attempt is made to maintain financial balance merely with the assistance of the ordinary financial statements which are given to the manager—the balance sheet and the profit and loss statement. But these are insufficient as measures of financial control. They give only a partial quantitative analysis of the assets, liabilities, net worth, etc., of the organization. They show neither the relationships between these items, nor their relationships to established standards. Financial balance can be attained only by the formulation of definite financial standards and the frequent comparison of actual conditions with those standards. Since the idea of balance in itself implies a proper relationship between two or more factors, the financial standards of the organization must be of such a nature as to bring out the relationship between the various parts of the financial structure. Analysis has proved that this can best be done by means of ratios. It would be unwise, for instance, to set an arbitrary amount of working capital as a standard to be maintained at all times. Subsequent operations of the business might change its needs so as to make this amount altogether out of proportion. But to set a standard ratio of working capital to fixed assets is of recognized value as a means of enabling the manager to measure the “life” in the financial structure. It is not the amount of a single item, but the relationship of that item to others, which is important. Consequently, standards, or ratios, must be established for the fundamental relationships in the financial structure.

Professor Charles C. Staehling, of the University of California, classifies into static and dynamic those ratios which, among others, he considers to be the most important in measuring changes in financial balance. The former show the relationship of fixed items at different periods of time, while the latter indicate the velocity of the business. Among the static ratios Professor Staehling includes the ratio of current assets to current liabilities, which measures the liquidity of the concern or its ability to pay current debts; the ratio of receivables to inventory, which reflects changes in the profit margin and assists in determining the trend of the current ratio, to which it is closely related; the ratio of total debt to net worth and to total capital, which indicates the proportion between owned and borrowed capital; the ratio of

net worth to fixed assets, which measures the extent to which the proprietor's investment covers the investment in fixed assets and provides working capital to run them; and the ratio of working capital to fixed assets, which measures the adequacy of the available working capital to keep up the activity of the fixed structure. The static ratios also comprise the supplementary ratios of current assets to total assets, and current liabilities to total liabilities, both of which ratios are used to substantiate the conclusions drawn from the other relationships. The dynamic ratios, while not primarily of a financial character, are of value in interpreting the financial condition of the organization, since they tend to indicate the quality of the items on the balance sheet. These include the ratios of sales to receivables, which indicates the liquidity of the receivables; sales to inventory, which indicates the turnover of investment in stock; sales to net worth, which shows the activity of the proprietors' investment; and sales to fixed assets, which shows the efficiency of the investment in fixed property. The conclusions drawn from the two foregoing groups of ratios are correlated and substantiated by the rate of return on average net worth, which, when considered in connection with the necessary margin of security, measures the efficiency with which capital has been applied.<sup>1</sup>

If ratios are to be effectively used as a means of financial control, four things must be considered. In the first place, each particular concern must establish standard ratios which indicate the most efficient relationships between the parts of the financial structure which can be secured under the conditions existing in that business. To these standards the actual ratios can be compared. Otherwise, there will be no way of knowing whether the actual ratio indicates a favorable or an unfavorable condition. In the second place, a ratio in itself is not of great significance unless the causes which have affected the ratio—which have made it relatively high or low—are investigated. It is necessary to

<sup>1</sup>BLISS, JAMES H., who has also made an extensive study of the value of ratios in management, in his book on "Financial and Operating Ratios in Management," and in his later articles, gives a detailed discussion of those ratios which he considers to be "the more important measures of efficiency."

WALL, ALEXANDER, in his book on "Analytical Credits," also takes up the subject of ratios.

know which side of the ratio has changed, and why, before conclusions can be drawn. Furthermore, a single ratio is not a reliable measure of the condition of the business, since its indications might be almost entirely offset by those of another ratio. It is the combined showing of the financial ratios which is important. Finally, it is not so much the ratios at any one time, but their *trend* which is significant. The financial condition of the business is in a state of constant change, and the direction of that change is the vital consideration. Only by the use of financial standards, embodied in standard ratios such as those mentioned, can this movement be ascertained and controlled.

**Predetermined Costs.**—The second element in the forecasting mechanism is an adequate system of predetermining costs. The extreme importance of costs in business, and their close relation to operating efficiency, is now being quite generally recognized. The more accurate the information concerning costs the more satisfactory will be the executives' control over the organization. But if costs are to afford a satisfactory means of control, they themselves must be controlled. Herein lies the necessity for the development of standards of costs, or, as commonly called, standard costs.

The present emphasis on standard costs as a dominant factor in organization control is due to the failure of ordinary cost systems to furnish the management with the vital information needed for the efficient direction and control of operation. As a means of supplying the management with timely, complete, and accurate data which will assist it in directing and controlling the activities of the business, the average cost system is utterly ineffective. This is due rather to the influence of a wrong viewpoint in the establishment of the system than to a lack of technique. The difficulty is that too often the cost system is constructed in accordance with the ideas of the old line accountant, instead of being formulated to fit the needs of the manager and his executives, who must actually control operation.

Technically speaking, cost systems can be very efficient—that is, they can compute with remarkable accuracy what it has cost to make each unit of product, to run each machine, etc.—and wherever a complete cost system is found this is usually the case. But while technically efficient, many of these systems are

almost completely lacking in ability to bring out and eliminate weaknesses and failures in operation, which are of primary interest to the manager and the executives. This may be attributed to the fact that until recently cost systems were considered as the exclusive field of the accountant—as something entirely apart from management rather than complementary to it. The accountant, on the one hand, was primarily interested in finding out where money had been spent, and as a consequence the records of his cost system showed only what had happened in the past. The management, on the other hand, was primarily concerned with the question of how best to invest its money in the future, how to reduce its costs and increase the efficiency of operation. This information the cost data did not reveal. In a majority of cases, the subdivision of the cost accountant's records was made without consideration of the divisions of authority and responsibility with which the management had to deal; as a result the two did not coincide, the collected costs were of little use to the management, and friction between the operating departments and the accountant was inevitable.

**Cost Accounting as a Tool of Management.**—Out of the dissatisfaction with these conditions has grown the realization that cost accounting, as well as general accounting, is before all else a tool of management, and should be adapted to management's needs. Only on this basis can cost accounting be justified. The practical application of this principle involves not a change in technique, but a change in principle. The coordination of the viewpoints of the accountant and the management requires, in general, two things. One is the establishment of the cost accounting system along the lines laid down by the subdivision of authority and responsibility, *i.e.*, according to the management's classification of work. The other is the transfer of emphasis from the past to the future; a substitution of cost predetermination for cost finding. In the first place, control will never be effective until there has been a definite subdivision and allocation of responsibility in the organization, since only then is it possible to trace efficiency or inefficiency, gain or loss, to its source. Likewise, no system of accounting or cost finding will be able to discover these sources until its subdivisions conform to the subdivision of managerial or functional responsibilities. Only



then can it judge the efficiency of the results obtained by each particular part of the organization. In the second place, the cost system cannot intelligently measure results until it has a definite means of so doing. In order to determine the efficiency of actual costs, there must be standard costs to which they can be compared. Therefore, any cost system which is to be of practical value to the management must make possible the predetermination of costs, for this is the essence of standard costs.

#### **Relation of Standardization to Predetermination of Costs.—**

Prerequisite to this predetermination of costs is the standardization of operation in every department where standard costs are being established, whether it be in production, sales, or general administration. Work must be done uniformly before it is possible to make an accurate estimate of its cost. The failure of a number of attempts to predetermine costs has been traced to the constant variation not only in the character of the work done but also in the methods and means used in doing that work. This can be eliminated by the establishment and use of standard practices. Satisfactory predetermination of costs is dependent upon the existence of adequate direction, *i.e.*, of planning, of standard practices, and of written instructions which will give uniformity of operation as a basis for estimating future costs.

#### **Coordination of Accounting and Operating Technique.—**

The primary purpose of costs is to provide knowledge which will facilitate control of all the various departments of the organization. To this end, the cost accounting system must in itself be technically well constructed and at the same time be adapted to the needs of these departments. Close combination of accounting and operating technique is required. Past experience has shown that one without the other produces but unsatisfactory results. Where the accountant alone is allowed to formulate the cost system, he too often fails to adapt his ideas to the demands of actual operation. Where the operating official or the engineer is permitted to formulate it, accounting technique is usually neglected, so that the resulting data are of questionable accuracy. The efforts of the two must be coordinated to formulate a balanced system. They must both be made to attack the problem from the same viewpoint—that of management.

But, though their efforts are directed toward the same end, the scope of their individual activities is clearly defined. It is the duty of the operating officials or their representatives to establish the division of functions that provides the basis for the classification of costs, to inform the cost accountant exactly what data they desire, and to establish the standard costs which are to measure the actual costs furnished by the system. It is especially important that the operating officials perform this latter function, since they have an intimate knowledge of operating conditions which the accountant ordinarily does not have, and which is essential to cost predetermination. The records of past performance kept by the accountant are of value in showing the movement of costs, but they are not a sufficient basis for the establishment of standard costs. They must be supplemented by the knowledge of standard times, standard methods, etc., possessed by the operating officials. It is the function of the accountant to formulate the system itself, on the basis of the classification of work which has been made, so that it will provide the data required by the operating officials promptly and accurately, *i.e.*, so that it will provide comprehensive actual costs for comparison with standard costs.

**Structure of the Cost System.**—The structure of the whole cost system will be dependent upon the nature of the information which it is required to furnish, and this will be governed in turn by the character of the concern. The attempt should be toward efficiency in supplying the data required by management rather than toward arbitrary simplicity of system. The system can be only as simple as the information which it must provide allows. Determination of detailed costs and their comparison with standard costs naturally involve a certain technical complexity of system, which does not, however, necessarily imply difficulty in operation. If the principles of cost accounting are properly applied and the system is adapted to the needs and to the peculiarities of the organization, there will be a simplicity in its functioning which is infinitely preferable to simplicity in its structure.

**Requisites of the Cost System.**—From the viewpoint of management, a good cost system must be constructed according to certain definite principles. First, there must be a close relation-

ship between costs and planning, brought about by the use of the same classification of operating activities. The preliminary planning and scheduling of work requires that the cost accounting system be suited to the accurate costing of that work—not only to the recording of its actual cost, but also, and even more particularly, to the predetermination of its standard cost. Second, the cost accounting system must be proved or supported by the general accounting system, since there is no other method of knowing that costs are right. Third, the system must always be basically consistent in its methods of collecting and allocating costs, so that valid comparisons between costs at different periods and between actual and standard costs at different times can be made. Any change of method should be allowed only when a change in operation has made it essential. Fourth, the system must provide up-to-the-minute information, presented as promptly as is consistent with the necessary detail involved, and preferably at regular periods. Fifth, in the interests of promptness and simplicity of presentation, the system must be discriminating as to relative values, *i.e.*, it must furnish those basic costs which are absolutely essential, with only such detail as is necessary for the understanding of the basic figures and as can be secured for a cost less than its worth. The essential thing to keep in mind is that costs are not an end in themselves: their function is one of facilitation. The purpose of the business is to produce and sell at a profit—not to collect cost figures.

**Master Schedule.**—The third element of the forecasting mechanism is operating schedules. The full value of standards will not be realized until they have been coordinated through the development of a master schedule for the entire organization. The master schedule, in a sense, brings the standards of performance together on a time basis. It is the means by which the operation of every part of the concern is so regulated and so adjusted that each constitutes a harmonious unit in a smoothly running whole. While standards of performance facilitate the exercise of control by affording the management continuous information with respect to the efficiency being attained by the various departments, the master schedule furthers control by planning ahead, by predetermining the program of operation so as to anticipate, in so far as possible, future transactions and

developments within the organization. While standards of performance show what the business is *able* to do, the master schedule forecasts what it will be *required* to do in a certain period of time; what demands are to be made on its capacity.

In order to direct and control the organization so as to maintain operation successfully, the management must know what is ahead of the business, what amount of work it will be expected to do and when it will be expected to do it, in order that preparations for accomplishing that work may be made. This requires the predetermination of a schedule of prospective operation so that at any time the organization will be equipped to do the work at hand, but will not be over- or underequipped. The master schedule makes possible the attainment of this end by estimating the demands which are to be made upon every department of the business within a certain period of time. For each department, it estimates how much that department will have to do, and when it will have to do it, in order that its activities may fit nicely into the the operation of the entire organization. With this complete program of estimated future performance at hand, the management can keep a close and continuous check on the results of actual operation by comparing them with the expected results. It may be that circumstances cause the actual performance of the business, or of a department, to fall short of or to exceed anticipated performance up to a certain time, thus necessitating a revision of the master schedule. The existence of this schedule enables the management to be prepared at all times to meet its requirements, since the check which it keeps on actual performance prevents the sudden appearance of conditions of whose development the management was hitherto unaware.

**Sales Schedule.**—While the master schedule embodies individual schedules for all the various departments, it brings them together not as unrelated units, but as integral and closely connected parts of a comprehensive and unified program. The close interrelation of activities makes it impossible to formulate any one departmental schedule independently of the others. There is, however, a fairly definite sequence which must be followed in the development of the master schedule. The first thing is to find out just how much actual work will have to be



accomplished, and this is done by determining the extent of the sales possibilities. This involves an estimate of the amount of product which the market can be expected to absorb week by week or month by month, or, more specifically, how much of each line can be distributed in each territory during the period under consideration. This indicates the amount of output which the organization will have to be prepared to furnish in order to satisfy the demand. The formulation of the sales schedule is really the adaptation of the sales standards or quotas which have already been set to present conditions. It requires a study of the conditions under which the past standards were reached, together with an analysis of the probable future conditions which may be expected to influence the volume of sales. The latter is especially important in those concerns whose market is seasonal or subject to fluctuations from other causes, since the time at which the product will be required, as well as its amount, is an essential part of the information which the master schedule must provide. The sales schedule, like a cumulative sales chart, should show at any time what amount of the sales quota has been accomplished and how much must be produced to satisfy the remaining need.

**Production Schedules.**—Working from the scheduled sales, the production department can estimate the amount of work which is to be required of it during the period covered. On this basis the departmental production schedule is formulated so that output at all times will be sufficient to supply the anticipated demand; *i.e.*, production is timed to fit the dates specified in the sales schedule. The standards of performance which have been set measure the capacity of the existing machinery and equipment, by providing data with respect to the time required by each department to put out a certain amount of product. This shows whether present production facilities are adequate to secure the necessary output in the time allowed, or whether additions and extensions must be made for this purpose.

**Purchase and Inventory Schedules.**—Based upon the production schedule are the purchase and inventory schedules. While the production schedule is, in a sense, a cumulative estimate of finished goods requirements, those for purchasing and inventory are estimates of the materials required by the production depart-

ment in order that it may carry out its program for the provision of these finished goods. The inventory schedule determines the amount of the different kinds of material or the different parts which should be kept on hand at any time in order that continued operation of the production department may be maintained. The purchase schedule tells when it is necessary to buy these materials or parts so that they will be available for use when needed, taking into account the length of time required to obtain them in the desired amount. The schedules of production, purchases, and inventory are so closely related, and one is so dependent upon the others, that absolute correlation of the three is essential.

**Labor Schedule.**—The production schedule is also the basis for the formulation of the labor schedule, since the amount and kind of production which is to take place over a period determines the labor requirements at any time during that period. This predetermination of labor requirements makes it possible to hire and, where necessary, to train workers so that they will be available when needed, that there may be no delays because of shortage of suitable men.

**Financial Schedule.**—The financial schedule is formulated after the needs of all the other departments have been determined. It is constructed so as to make available at the proper time funds in sufficient amount to carry on all the various activities of the concern. This involves primarily an estimate of all cash or other receipts and disbursements over the period covered by the schedule, accompanied in so far as possible by the dates upon which they are to be made. Both the sales program of the business and the character of its production, especially as regards length of production period, have a strong influence on the financial schedule. If sales are largely concentrated in one season, funds must be provided to carry the business through the period when the receipts from sales are reduced. If the production period is long and turnover relatively slow, more capital will be required than if the production period were short and turnover rapid. These and many other factors, which vary with different businesses, must be taken into consideration in the formulation of the financial schedule. The financial standards, which have determined the most efficient relationships

that can be maintained between the various items included among the assets and liabilities of the concern, are of material assistance in this respect. The important thing is not simply that there be *enough* money to meet all expenses, but that it be *available at the proper time*.

**Formulation of Schedules.**—The usual procedure in the formulation of schedules is to have the departmental estimates prepared by the heads of the responsible departments, and then to have any adjustments which may be necessary for their coordination into a master schedule made in conference and under the direction of the general manager. This is necessary in order to insure the close correlation of all the parts of the master schedule and to secure the cooperation of each division in carrying it out. It is essential to enlist this cooperation from the start, so that the executives will exercise care both in estimating their schedules, and in comparing their performance with the master schedule and keeping up to it. The master schedule is an effective means of control only when actual performance is consistently checked up against it.

**Recording of Results.**—A complete and scientific system of control requires the recording of results of actual performance as well as the forecasting of results. The reciprocal relationship between standards and records is so close as to make these two control factors practically inseparable. Without records, the effectiveness of standards would be lost. Efficient records tell management exactly what the organization is doing. Compared with standards of performance, standard costs, and schedules, they show how efficiently the work is being done, where the concern has fallen down, has made good, or has improved upon its past record or the established program. It is from the data embodied in the original records and from these comparisons that reports for the general manager and the various executives are compiled.

**Preparation of Reports.**—Reports must bring to the manager and his executives that information which they have decided is essential to their control of the organization. What that information shall include, it is the function of these men to decide. The actual collection of the required data and the preparation of the same for use by the manager and the executives—their

segregation, analysis, and combination into reports suitable for the various purposes—is the function of the accounting department. Performance of this function requires a sound accounting system so divided that the records of current performance are automatically classified according to the definite divisions of responsibility which exist within the organization. Furthermore, the detailed information which comes in from all these divisions must be so correlated and condensed by the accounting department as to be of the greatest possible value as a means of control. As embodied in the accounting records, the information is too voluminous and too detailed to be of practical value in directing and controlling the organization. But the accountant instructed as to the requirements of the various individuals for whom he must provide reports, and having at hand all the essential facts, can bring out the really vital data relative to current operation, so that actual performance can be easily compared with anticipated performance.

**Nature of Reports.**—The manager is by no means the only member of the organization to whom the accounting department must supply information. The department heads, and even the superintendents and foremen, are equally in need of data relating to the operation of their various divisions. Since the chief executive cannot exercise full control over every activity of the business, he should not make himself the sole recipient of the information which is so essential to effective control. His subordinates must also have definite data on which to base their decisions. Except in the case of the department heads, who must assist in correlating the work of their departments with that of all the others, these data need concern only that field with which the subordinate is concerned. But in this field, the reports which he receives should be as carefully adapted to his purposes as are those of the general manager.

The type and character of the data embodied in the reports which keep the officials of the organization in touch with its current operation consequently vary according to the rank of those officials. The information required by the foreman or the superintendent is necessarily detailed, since these officials are in constant contact with detail work. The department head wants less detail, with a more general view of the significant facts apply-



ing to his department as a whole, while the general manager needs a still more concise statement embodying the operation of the entire concern. There is no set rule governing the exact nature of the reports which should be sent to the manager and the various executives—this is determined by the scope of their activity and the nature of the business. The essential thing is for the accounting department to know just what information each needs, and then supply it to him in usable form.

Reports necessarily vary in every business. In no two organizations are the data required by the manager and the executives identical. In each concern there are certain special reports which have been made necessary by the nature of the concern's particular activities; by the presence of unusual but highly important problems; by existing business conditions, or other similar causes. But in most manufacturing and selling concerns, the general content of the various reports can, to a considerable extent, follow similar lines.

**Type Reports for the General Manager of a Manufacturing and Selling Concern.**—The general manager, for example, should receive *daily* reports as to quantity and value of orders; quantity of production (by units); shipments for the day and to date (by units); unfilled orders; and the trend of cash to current liabilities.

The *weekly* reports to the general manager should embody, in so far as is practicable, comparisons with past results, with standards, and with the master schedule, and should include reports on total orders for the week and to date; total production for the week and to date (by units or departments); unfilled orders; delinquent orders; product on hand by departments (in units of raw material, goods in process, and finished goods); departmental payroll analysis for the week and to date (including percentage of overtime, etc.); and the ratio of current assets to current liabilities.

The *monthly* reports to the general manager, like those which he receives weekly, should embody comparisons with past performance, standards, and the master schedule. They should comprise reports on: (1) sales for each class of product (total for the month and to date); (2) sales by districts and subdistricts (total for the month and to date); (3) unfilled orders; (4) returned goods; (5) total production by departments; (6) labor and materials

used (total for the month and to date compared to standard amount for goods produced); (7) raw materials on hand and contracted for, goods in process, and finished goods; (8) analysis of labor turnover; (9) percentage of delinquent accounts to total accounts receivable; (10) cost of production by lines and divisions; (11) cost of sales by lines and territories; (12) general administration costs unless such costs are prorated to production and sales; (13) comparative balance sheet with statement of sources and application of funds, and static and dynamic ratios; (14) earnings for the month and to date; (15) profits by lines, in the form of a chart giving comparison of total costs to selling price, showing fluctuations over the monthly period; and (16) comparison, by divisions, of total cost with standard cost.

**Type Reports for the Sales Manager.**—The sales manager needs regular reports which embody comparisons of sales standards with actual sales by lines; sales according to districts and subdistricts; sales by individual salesmen; sales according to type of customers; sales for cash; and sales for credit (by terms). He should also get information as to discounts given; unfilled orders; returns and cancellations; overdue accounts; advertising (distribution and expense); cost of sales by lines, districts, and subdistricts; expenses of salesmen; and turnover in the sales force.

**Type Reports for the Production Manager.**—The production manager requires periodic comparative reports on: (1) the quantity of production (by units and divisions); (2) unfilled orders; (3) delinquent orders; (4) goods shipped to date by lines or other convenient division; (5) raw materials on hand and not yet delivered, stocks in process, and finished goods; (6) spoiled and second-grade product (total by units or departments and percentage of total production); (7) man or machine hours, etc. (by divisions); (8) wastes, idleness, and delay (in relation to orders); (9) labor and material used (by departments, compared to standard amount for goods produced); (10) analysis of payroll by departments; (11) analysis of labor turnover; and (12) analysis of costs of production (material and labor costs and general and special manufacturing expense by units, lines, and departments). The foreman within the production department should also receive at regular intervals simplified cost reports with respect to those

elements of costs which are under his direct control, these reports embodying a comparison of the actual costs with past and standard costs.

**Type Reports for the Financial Manager.**—The periodic reports to the financial manager should include, in general, a report on receipts and disbursements for the period covered, a report on the financial position of the business in relation to the financial schedule, and reports embodying the purely financial ratios (current assets to current liabilities, total debt to net worth, net worth to fixed assets, working capital to fixed assets, etc.).

The foregoing are illustrative of the type of reports with which the manager and executives of a manufacturing and selling concern should be provided in order that they may be able to control it effectively. In addition, reports of a similar character but specialized according to the nature of the work being done, should go to the other departments, *i.e.*, to all those who are responsible for departmental operations.

**Qualifications of Reports.** *Promptness.*—Each of these reports, regardless of its content or destination, should be characterized by certain general qualifications. In the first place, it should be prompt. It should be received before the length of time elapsed has destroyed its value as a means of detecting and preventing waste and inefficiency in operation. Reports must make the necessity for changes evident before the making of those changes becomes of no avail. The statement which brings to light an unsatisfactory condition only after this condition has been in existence for several months or even several weeks is not achieving the end for which it was designed. The nature of the information itself is the chief determinant of the frequency with which it should be presented to the executives. In many cases, especially in production, it is not possible to wait until the completion of an order to make a report concerning it. The nature of the operation often requires that daily reports be compiled from the records of its progress and presented to the executive in charge of the work.

*Simplicity.*—In the second place, reports should be as simple, concrete, and self-explanatory as permitted by the nature of the required information. They should contain only vital information, which should be presented in such a way that reference is

made easy to more detailed data relative to causes, relationships, etc. The executive wants from his report a complete but concise picture of what he desires to know, not a mass of detailed facts, all of which may perhaps pertain to the subject but in varying degrees of importance. A report of the latter type loses through complexity more than it could ever lose by the omission of some of the relatively unimportant data. A report of a fairly general character is often more "accurate," in the sense of giving the correct impression to the executive, than is the one which is cluttered up with insignificant and possibly misleading facts.

*Comparison with Standards of Performance.*—In the third place, wherever possible, reports should embody a comparison of past performance with the established standard or schedule. To the executive who is attempting to direct and control operation, reports should provide a barometer for gaging the success or failure of his efforts. They can do this only when they include the essential comparisons which the executive is often too busy to make for himself.

*Presentation.*—In the fourth place, reports should be presented in such a manner that the most vital facts are immediately apparent, with the less important data subordinated to them so as not to impair the force and clarity of the essential information. In almost any report, there are a few points of greater significance than the rest, which should be more forcefully impressed upon the executive than any of the others. The form of the report—the arrangement and presentation of the data—is therefore a most important consideration, since it determines, to a great extent, the attention which the report receives. If it is necessary to present a report in statement form, careful arrangement of the facts or figures must be depended upon to convey the desired message to the executive. But, wherever possible, graphic charts should be employed in the presentation of data. Charts enable the executive instantly to see the trends and relationships which he would have difficulty in visualizing merely from checking over a group of figures. They give him only the outstanding facts and impress these facts upon his mind more forcibly than any written report could do. Charts offer by far the best means of bringing out comparisons between actual



and standard or scheduled performance, and are, therefore, a most effective means of control.

**Putting a Control System into Operation.**—In the development and use of the mechanism for control, especially with respect to the records which are to be made out, there are two points concerning which caution must be exercised. The first is the danger that, through a desire for completeness of data, the system will be made overcomplex, involving undesirable "red tape" and an excessive cost of operation. The mechanism of control should be limited to that which is essential to the provision of really necessary data, *i.e.*, data whose worth exceeds the cost of maintaining the system that furnishes them. In estimating the cost of introducing any control element, it is necessary to consider not only the cost of maintenance, but also the cost of the disorganization which ensues when the attempt is made to change an operating habit of the business. If the expense of installing and operating the system of control or any part of that system is greater than the saving which it effects, or the added results which it makes possible, then its primary purpose is not being fulfilled.

The second point of caution is the danger that too much dependence will be placed on the inanimate elements of the control system. Records can never take the place of men. Too many managers think that when they have installed a comprehensive plan for control they can sit back without further effort and watch it run the business. But standards and schedules and records are not capable of operating the organization; this can be done only by the decisions of men. Records and standards of a controlling character aid the men who direct the organization, but in themselves they can institute no action. They serve merely as the basis upon which to determine what necessary action is to be taken. In this respect records, as well as all the other elements of control, are indispensable; but they must always be looked upon as auxiliary forces, as an aid to executive direction and control rather than something which can take its place.

In putting a system of control into actual operation, it is ordinarily impossible to introduce at one time all the elements of control. The efficacy of the system would be lost in the confusion

resulting from the sudden and radical change in method of operation. The control system, in order to get the cooperation from the human element that is so essential to its effectiveness, must be developed gradually. The important thing is to make a beginning. In many cases the most effective beginning is the establishment of an accurate cost system for some department of the organization, which can be gradually extended until it covers the whole business. On this basis of actual costs it is possible to build a system of standard costs, and from standard costs to progress to the establishment of all the various control elements that have been mentioned. Once the principle of control is adopted, and mechanism is provided to supply certain information, this information calls for the provision of supplementary data, until, if the work is properly done and all the different control elements are recognized, in time there will exist a comprehensive system of control. Control of a sort is found in every business: the idea is to discover, through research, analysis, and experimentation, the most serviceable methods through which to make control more effective.

## CHAPTER VII

### THE SEVENTH FUNDAMENTAL OF BUSINESS ORGANIZATION: DELEGATION AND COORDINATION OF AUTHORITY AND RESPONSIBILITY

Overcentralization of authority and responsibility in the general manager is the principal factor contributing to the failure of many concerns. The chief executive is preeminently responsible for the maintenance of that breadth of outlook which is essential to the progress and prosperity of the business. When the whole burden of execution rests on his shoulders, when he is overwhelmed by the multitude of detail attendant on the direction, supervision, control, and coordination of the entire organization, he cannot properly fulfil this responsibility.

That centralized execution still exists is due chiefly to the force of tradition. The modern business man, attempting by blind imitation to duplicate the phenomenal successes of the "old line" executives, forgets the changed conditions in business today which the direct personal methods formerly used are inadequate to meet. The older executive entered an unexploited field; the present-day business man encounters the keenest of competition. The "old line" manager grew up with his business and knew thoroughly its every phase; the modern executive more often steps into a comparatively strange organization with the administration of which he must familiarize himself. The modern business man, consequently, can manage his organization most effectively, not by concentrating all the administrative, executive, and judicial power in his own hands, but by delegating part of it to those individuals who, through familiarity with the work of the concern, are thoroughly equipped to direct, supervise, and control its various departments.

Many managers are reluctant to surrender the "reins" of the business into the hands of their subordinates. As a result, they are so burdened, through centralization of execution in their own hands, that they cannot keep abreast with the developments

in modern organization and management: definite policies; functionalization; proper placement of personnel; the direction, supervision, and control of an organization; non-financial incentives; and the delegation of authority and responsibility.

The effect of this attitude is to retard materially the progress of the concern. The introduction of modern improvements in method is lacking, and the limit of expansion is fixed by the ability of the manager. When this ability is taxed to the utmost by the strain of the problems arising daily in the various departments, there is little left to apply to the problems and outlook of the business as a whole.

The danger of concentration of control in the hands of one man is illustrated by the case of a certain middle-western manager who operates a spring factory. Having grown up with the business, he is thoroughly familiar with all its details. He gives all orders, signs all letters, makes all decisions. Should an emergency force him to be absent, all questions, even those concerning routine operation, must await his return. Work is continually retarded; the employees, lacking any incentive to spur them to greater effort, draw pay for time wasted. Without its ruler, all relations between the various departments would terminate and the concern would cease to exist.

Failure of the manager to grant definite authority and responsibility leads to other deplorable inefficiencies within the concern. The manager, having no check on the performance of those under him, since none of them is responsible for the accomplishment of definite tasks, is unable to judge the real worth of their services. This situation almost invariably places a premium on noise and bluster, and discounts genuine, unobtrusive effort. The quiet, capable man is often overshadowed by the aggressive, domineering man, who too often covers actual incapacity by showy, spectacular methods. Even though the domineering personality be coupled with real ability, his excess of influence will upset the balance of the organization, since the manager, impressed by the outward appearances of his performance, is apt to give his ideas preference over those of the other members of the concern. Thus one forceful character, through this influence over the chief executive, may gain virtual control of the whole organization, and the various functions will be directed and controlled, not by



capable heads possessing authority and responsibility but by an individual who has very little knowledge of actual performance. A balanced organization cannot be maintained under conditions like these.

The failure to place definite authority and responsibility in the hands of capable executives breaks down the morale of the entire personnel. No individual has full power to direct and control any part of the work—why should he take a particular interest in its performance? He will receive no credit for a job well done—why should he put forth extra effort to secure results? He has no opportunity to exercise initiative, to develop executive ability through experience in exercising authority. The main idea is to “get by,” since there is no incentive to impel him to anything further.

Even an executive, if he lacks the power to make decisions and to direct the work properly, will soon lose control of his men. To subordinates he will become a mere figurehead, a “straw boss,” to be punctually obeyed only in the execution of an order issued by one in authority. Should the workers take exception to an order issued by the executive himself, they can go over his head and appeal to the chief, giving, of course, but a one-sided version of the argument. If the executive wishes to see the order obeyed, he must also appeal to the same source, perhaps only to be overruled. Antagonism is thus bred between executives and workers, as well as between executives and the management. The absence of fairness and consideration induces discontent and friction. Neither executives nor subordinates can do justice to their work, since initiative is deadened and interest lost. Leadership is superseded by drivership and operation becomes purely mechanical, lacking, however, the efficiency of a machine. The result is that the organization becomes but a disorganized, disinterested body of individuals without any loyalty or goodwill for the business.

**Delegation and Coordination of Authority and Responsibility as a Fundamental of Organization.**—These undesirable conditions indicate the necessity for delegating authority and responsibility to specialists who can give concentrated attention to each phase of the work. The manner of that delegation offers a concrete problem in which is involved a vital principle of organization:

namely, that authority and responsibility must be *coexistent* and *conterminous*. One without the other is useless. The delegation of authority for the performance of definite work with coordinate responsibility for its execution is a fundamental of organization; a prerequisite to effective operation, to the maintenance of a vitally interested personnel cooperating to secure the greatest efficiency of the whole concern. Failure fully to understand and appreciate this fact, combined with an indefinite conception of the meaning of the terms "authority" and "responsibility," often causes unsatisfactory observance of this fundamental.

"Authority," in general, includes two elements: the right to command that such orders as are issued be carried out; and the power to enforce their execution. Authority must always be granted. It cannot become an inherent characteristic, because positions of trust are created in accordance with the needs of the organization and no rule-of-thumb may mark the authority required, even in like positions in different concerns. Since discipline is dependent upon authority, each of the heads responsible for the performance of the multitudinous duties of the business must be given proper authority to make his direction and control effective. This definitely fixed authority should extend from the owners of the business in a tapering system down to every employee of the concern, for the efficient performance of any task depends upon the possession of the full authority requisite to facilitate its prompt execution.

"Responsibility" means being accountable for the performance of a duty, that is, being answerable for its discharge. To each man in the organization, from the chief executive to the worker, certain duties or functions are assigned as his part in the activities of the concern. Each, therefore, assumes a burden of obligation to carry out those functions; he becomes *responsible* for their performance. The degree of this responsibility is dependent upon the position which the employee occupies. The chief executive, because of the scope and importance of his functions, bears an enormous burden of responsibility. The worker, whose duties are comparatively simple, bears a much smaller but no less definite burden. Regardless of this difference, each employee must be entirely responsible in his own field

in order that he may be held accountable for the results which he accomplishes, and in order that these results may not be confused with those of others.

**Necessity for Coordinating Authority and Responsibility.**— Authority and responsibility are complementary; neither one alone is sufficient for the proper execution of work. The executive who reserves for himself the authority for decision must necessarily reserve also the responsibility for results. Authority alone may be delegated to a subordinate who is not thereafter held definitely responsible for results; but responsibility alone cannot be delegated. It is impossible to hold a worker responsible for certain duties when he lacks the authority which would give him power to act. The maintenance of a balanced organization depends upon the existence throughout the concern of a reciprocal relationship between responsibility and authority. Responsibility alone ties a man's hands, since he lacks the necessary equipment with which to discharge the responsibility. Authority alone leads to interference, petty faultfinding, and direction by irresponsible executives. Indefinite delegation of authority and responsibility results in friction and duplication of effort. In none of these situations is there the precise balance of functions essential for a strong organization composed of interested executives.

Responsibility without authority materially retards the efficient operation of the business. The production manager may wish to alter a certain procedure; the purchasing agent may need to make an urgent purchase; the sales manager may plan certain allocations of districts; but, refused authority, each executive, instead of being a department manager, is but a high-priced office boy who must wait upon the general manager to secure approval for each separate act. His accomplishment is dependent upon the promptness and good judgment with which the manager makes decisions regarding his work. Execution is thus hampered, initiative destroyed, and active discontent engendered in executives who in this fashion are held responsible for performance which it is not within their power to accomplish.

The tremendous waste of time and effort incident to lack of authority is evident. If, for example, the crane operator reports to the foreman of the machine department that his

motor has burned out, the foreman wastes his own time and that of the superintendent by going to the latter for instructions. The superintendent, also lacking the requisite authority for making a final decision, awaits the convenience of the manager, then takes up that executive's valuable time with this comparatively trivial matter, only to receive the simple instruction to have the motor repaired or replaced. Whatever the decision reached, the foreman himself is probably more capable of passing judgment in cases like this than is the manager. If he is delegated the authority to do so, the time of all three—workman, foreman, and superintendent—is saved. There are certain decisions which can be made by the chief executive alone. There are others which can be made more successfully by the minor executives who are nearest the actual execution of the work; and to deny these executives the authority to make such decisions hampers effective operation of the concern.

Absence of definite responsibility to accompany authority is equally detrimental to the organization. The executive who possesses authority and yet is not held liable for any specific results which might reflect his position in the concern, will chafe under inactivity and develop a desire to manifest his importance. Having no legitimate means of exercising his authority, he will attempt to demonstrate "who's boss" by interference and petty faultfinding, hindering rather than helping performance. A continual annoyance like this undermines cooperation and goodwill and eventually destroys morale. Responsible subordinates will be constantly subjected to an arbitrary imposition of authority by those who are not accountable for results. The latter, moreover, knowing that the blame for errors will not fall upon their shoulders, will be careless in issuing orders. Since, in the absence of any definite responsibility, there is no means of checking up on performance, the one holding power can act in any manner he sees fit, regardless of the policies of the company or the welfare of the concern as a whole.

Colonel Goethals encountered a condition somewhat analogous to this when he took charge of the construction of the Panama Canal. He found numerous political favorites in positions of authority which carried no attendant responsibility, while men of worth and ability in positions of great responsibility lacked the



authority necessary to effect a discharge of that responsibility. Friction between the two types of executives was preventing cooperation and hindering progress. He remedied the situation by ejecting the "authoritative" executives and transferring their authority to the "responsible" executives.

When authority and responsibility have been delegated but not definitely fixed, it is a common occurrence to find that there are certain functions which no one has directly in charge, while others are subject to the overlapping control of two or three individuals. The executives are in continual conflict as to the extent of their authority—each claims and uses all that he dares, and relinquishes as little as possible, and in the struggle for executive supremacy cooperation is superseded by quarreling and friction. Even the workers are affected by a failure to draw clearly the lines of authority and responsibility. Not knowing to whom they are responsible, they loaf on the job and attempt to conceal their action by playing one boss against another. "Soldiering" is sure to become prevalent unless each activity is under the definite direction, supervision, and control of an executive who possesses both authority and responsibility.

**Why It is Necessary to Delegate Authority with Coordinate Responsibility.**—Conditions which make essential the delegation of authority with coordinate responsibility are found in every division of the organization. Efficient management requires the decentralization of execution in order to leave the manager free to direct his attention to matters which affect the business as a whole; such as the formulation of policies, the coordination of departments, or the assistance of some particularly troublesome department until it is again running smoothly. By delegating part of the burden of direction, supervision, and control to competent heads, he can devote specialized effort to these phases of the work. By giving those in charge of the various departments of the business authority and responsibility within their own fields, the manager develops a corps of consulting experts who know from experience the exact conditions under which each department operates, and who are consequently in a position to offer concrete suggestions as to the conduct of the business. Their more intimate connection with the details of

operation enables these executives to study and develop new methods which the manager would have no time to consider. Their suggestions, coming from every department, give to the manager a comprehensive fund of information upon which he can base decisions, because he is assured that he has knowledge of all angles of the problem in hand. Decentralization of executive power makes management's control of operation more complete through the joint administration of affairs by all the officers and their assistants, who are interested in the effective performance of the work because of the authority which has been delegated to them and the consequent responsibility which they bear.

*To Secure Executive Cooperation.*—From the point of view of executive efficiency, the delegation of authority with coordinate responsibility is equally essential and advantageous. Cooperation among executives can be secured only when they have the power to act upon their own initiative. Their desire for leadership, for authority, must be gratified in order to stimulate a spirit of goodwill and earnest endeavor. In the absence of any provision for this gratification, the executive, instead of being willing to cooperate, becomes excessively jealous of what little authority he possesses, and is inclined to resent and stubbornly oppose any act or policy which seems to infringe on his powers. Petty treatment always develops petty human beings; and niggardly delegation of authority and responsibility inevitably results in active resentment on the part of executives. This finds expression in bickering and faultfinding with one another and with subordinates. Such an attitude naturally has an effect on the whole working force, causing loss of respect for superiors and distrust of their actions.

The possession of authority and responsibility stimulates a sense of "ownership" in the business, which is accompanied by keen interest in the results secured. It also materially lessens the necessity for constant supervision and correction. In order to foster this interest those in authority should be given some means of judging their own accomplishment. Records of present performance in a particular department; comparisons of these records with standards of performance, standard costs, operating schedules, or past performance; data concerning the rate of

increase in output for each month, week, etc., over the same month or week of the preceding year; and similar kinds of information, all tend to stimulate the executive in vindicating his right to possess authority and responsibility by increasing the efficiency of his department.

The proper delegation of authority and responsibility means greater cooperation of executives, better feeling between executives and management, more complete control of the activities of the business, and stimulation of interest in the work.

*To Stimulate Interest of Workers.*—The executive in his turn must delegate sufficient authority and responsibility to his subordinates to arouse their initiative and interest. Petty interference in their work, and judgment of their performance by the details of routine methods rather than by results secured, will prevent them from attempting any change or improvement for fear of censure in case of possible errors. They will avoid making decisions by referring all possible questions to a superior, accepting his verdict even though they know it to be wrong. Such an attitude narrows the vision of the subordinates, dwarfs their natural capacities, and makes them unfit for the real leadership necessary in positions of greater importance.

But wisely imposed authority and responsibility, with executive support and encouragement, develops in any organization a force of men capable of filling executive positions. The ability of the individual, and his value to the organization, increases in proportion as he is allowed to exercise his own initiative and to make his own decisions. Experience in the exercise of authority and responsibility is essential to the development of those qualities required in a good executive. The ability to analyze problems, to visualize clearly, to think accurately, and to decide quickly, are fostered by granting power to act and by compelling the exercise of individual judgment in the execution of orders. Mistakes will undoubtedly be made, but even an experienced executive is not infallible; and these mistakes if carefully explained and corrected usually will not be repeated. The commission of the error is in itself a sign of initiative, of willingness to attack new problems and undertake new tasks. Through continual meeting of emergencies, facing of problems, and making of decisions, faculties are sharpened so that the for-

mulation of these decisions becomes ever easier and more accurate. The subordinate, through the gradual extension of power he receives, becomes thoroughly familiar with the methods of exercising authority most compatible with plant policies, and is not tempted to assume an autocratic manner when placed in a position of authority, as he might be if promoted without previous training. By giving subordinates an opportunity to understudy the positions ahead of them; by giving them authority and responsibility which gradually prepares them for those positions, a permanent, vitally interested executive force is assured. This condition obviates the possibility of executives dictating autocratically to the manager. And it contributes to the stability of the organization, since the presence of such men eliminates the danger that any one individual may become so indispensable that his loss would result in hardship to the organization.

There is little danger that this authority will be misused to the detriment of the organization by those to whom it has been delegated. The man who has full power to control the work under him bears also the responsibility for its performance. He is restrained by the necessity of acting in accordance with the policies of the concern and of cooperating with the other members of its personnel. Furthermore, he is not usually placed in charge of important work unless he has previously demonstrated his ability to exercise authority in a lesser degree. The very fact that he is acting upon his own initiative and is answerable for the results of his actions will prevent him from careless or improper use of his power, for when a man issues an order on his own responsibility, he is much more careful than when only making a recommendation for someone else to act upon.

*To Provide a Basis for Measuring Individual Results.*—The definite allocation of authority and responsibility provides a basis upon which the manager can measure individual results. Without a clear delimitation of the duties of each member of the organization, it is impossible to tell whether or not a man is adequately performing those duties or is shifting his responsibilities to the shoulders of others. The check upon performance afforded by the definite delegation of authority and responsibility provides the opportunity for giving credit to those who have



shown special energy and skill in leadership or execution. The prospect of receiving approbation for work well done or for the development of new ideas is a powerful incentive to employees. This fact can be utilized by the manager or executive to improve performance of the work in hand. It is not wise to issue peremptory orders to those under him, but he may profitably make tentative suggestions, get them to accept the ideas as their own, then give them credit for successful application of the ideas. The subordinate who believes the plan to be his own is stimulated to work more enthusiastically for its success; and, since the executive will get final credit for the achievements of his department, he should not be reluctant to give praise for individual accomplishment. Just as morale is strengthened by receiving credit, so is it destroyed by being deprived of proper appreciation. Nothing is so disheartening to an employee who has worked hard and conscientiously to accomplish a really worthwhile piece of work as to have his superior smilingly and modestly accept credit for it.

The following occurrence illustrates this point: A clerk in the statistical department of a large western bank, having a little spare time, decided to make a certain study on his own initiative. This particular work had never before been required. The clerk finished the statistical table and handed it to his superior, who thanked him for it. A few days later, the Board of Directors happened to ask for the specific information contained only in this table. The executive in charge of records and statistics promptly produced it, and when complimented upon the speed with which the information was furnished, replied, in the presence of his clerk: "I thought you might want that information so I had it prepared ahead of time." The young clerk now works for another bank.

Delegation of authority with coordinate responsibility is essential to the efficient operation of any organization. The development of new ideas, the continual striving for improvements, is to be found only in the concern in which the employees are allowed to express their own personalities in the work; where they have authority to act upon their own initiative, within the limits of their responsibility. Observance of this fundamental of organization develops men who are more interested in results—

results for which they are responsible, and which reflect their ability—than they are in the immediate monetary return.

**The Delegation and Coordination of Authority and Responsibility.**—The delegation of authority with coordinate responsibility, if it is to achieve the desired end, must be absolute and must follow logical lines. Many managers, finding the burden of detail too heavy for them to carry, merely surround themselves with a number of subexecutives or aids—a secretary, a chief clerk, or other personal assistants—to whom they give authority to issue orders in the manager's name. This method immediately defeats its primary purpose. It does not relieve the manager of the necessity of deciding petty questions, nor secure coordination of work. The manager still bears the responsibility for the operation of the whole concern and must make even minor decisions whenever rules do not apply or in an emergency when quick action is required. Instead of definitely placing the various departments in the hands of experts he has merely scattered the direction of some of the activities among his assistants, whose work he must still closely supervise. He has, as a result, removed but little of the burden from his own shoulders. The credit for all accomplishment comes to him, so that he has failed to gain the advantage of this incentive for his executives. The chief clerk or secretary, moreover, lacking the proper perspective, and unable to visualize the conditions confronting the various departments, is liable to place too much emphasis on the office point of view of rules and routine, and as a consequence issue orders with little reference to the possibilities of their execution. This arbitrary attitude on the part of one who is, in the opinion of the executives and workers, but a substitute authority, will cause dissension in the organization. To delegate authority and responsibility in this illogical fashion is bound to be detrimental to any business.

**Functionalization.**—By separating the business into coordinated departments and subdepartments, functionalization provides a logical plan for the delegation of authority and responsibility. On the basis of the functional divisions, full authority and responsibility for the detailed direction, supervision, and control of such departments as production, sales, finance, purchasing,

engineering, personnel, and miscellaneous administration can be delegated to skilled heads thoroughly familiar with the work in these fields. Thus the personal attention of the manager is required only when a department is not operating satisfactorily or when a new function, new policy, or new process is being contemplated or installed. Within the department, likewise, part of the burden of varied functions borne by the department head can be delegated to subexecutives, and so on throughout the organization.

Functionalization makes possible the coordination of authority and responsibility in this delegation, by determining the exact scope of every position in the organization. It recognizes each function as a separate entity, involving certain duties and requiring certain characteristics for its performance. This makes it possible to give to the individual occupying any particular position definite authority and responsibility for the specific functions included in that position. Similar and related functions are placed under one head, in order to secure coordination in execution. The extent to which the functions are grouped, and the scope of each man's authority and responsibility, are largely dependent upon the size of the organization. For instance, in a large concern purchasing might constitute a department in itself, and its head would be charged with authority and responsibility for only the one function; but in a smaller business the head of the purchasing department might also be in charge of stores and other related activities. The essential point is that no matter whether the manager, executive, or subordinate is controlling many or few functions, he knows exactly what is included in their performance. He has just so much authority—there is no possibility of his usurping more. The limits of his responsibility are identical with those of the field over which he has authority.

**The Organization Chart.**—It is desirable to take some means of making clear to the individual himself, and to others, the scope of authority and responsibility of each member of the organization. This need is met by the organization chart, which shows the relationship of functions and the lines of control in the concern and gives a general view of the authority and responsibility of each individual. The personnel chart, that substitutes for func-

tions the persons who are responsible for the performance of the functions, further emphasizes the exact scope of individual control. Together, these charts constitute a graphic presentation of each man's authority and responsibility, one showing the functions and the other the persons who are to perform them. They enable the executive to see at a glance the extent of his authority and responsibility, that is, the work which he is to direct, supervise, and control, and the persons to whom he can give orders; and they enable the subordinate, likewise, to know just who has the right to give him orders.

**The Organization Manual.**—Charts, however, can give only a bare outline of the limits of authority and responsibility. It is, therefore, advisable to include in the organization manual a more detailed discussion of the duties involved in each position. This obviates any question as to who has the authority and responsibility for any particular task. The charts show the limits of authority, rather than the specific powers which that authority includes; the organization manual limits authority and responsibility by conferring definite powers. This does not in any sense mean that the manual should prescribe rules of action for every member of the organization. The department heads, for example, are allowed to use their own initiative within the limits of their authority. Certain powers are conferred upon them—the method of exercising those powers is left to their discretion, as long as they act in accordance with the policies of the concern. This is true, in a lesser degree, for all those who possess any authority.

**Developing Executive Ability.**—The full benefit of such a careful delimitation of powers will be secured only when authority with responsibility is delegated to individuals who are capable of assuming it. While it is sometimes possible to find, outside the organization, men suitable for the various positions, the safest method is to develop, within the organization, a force of potential executives. A gradual delegation of authority and responsibility to the subordinates in the organization, and a steady increase of the load upon those who show ability, soon brings to the fore men who are capable of developing into good executives. Devote special attention to those who have demonstrated their possession of strong personalities, keen, analytical minds, and a knowledge



and appreciation of human nature, and the organization will not lack for men capable of filling its positions of responsibility.

The delegation and coordination of authority and responsibility is the fundamental of organization which guarantees that all who bear responsibility have the power to fulfil that responsibility, and all who possess authority are held to answer for the results of its exercise.

## CHAPTER VIII

### THE EIGHTH FUNDAMENTAL OF BUSINESS ORGANIZATION: INCENTIVE

The present industrial and commercial system, erected upon the foundation of specialization and large-scale production, affords an opportunity for utilizing to a high degree both perfected mechanical and material devices and human capacities. It is not difficult to obtain maximum production from machines and equipment, since this requires merely the application of technical knowledge; but to get maximum production from human beings demands something more—their *willingness* to work and to cooperate. Although wage payment and the threat of discharge have served to keep men “on the job,” these devices have not been able to cultivate this necessary willingness in the workers. For this, the conditions of modern industry are largely responsible, because they have taken away from work any inherent attraction which it might formerly have possessed. The average job has become so limited in scope and the tasks included in it so specialized, that the worker finds little interest in its performance. Every element concerned with his production—tools, materials, and methods—is determined for him. He has, in large measure, been deprived of the chance to exercise his own judgment and initiative; has been robbed of the incentive to gain, through distinctive workmanship, the approbation of his employer and his fellow-workers. The impersonal character of the relationship that exists between employer and employee in the modern large-scale organization prevents the development of a mutuality of interest such as prevailed in the small organization where each had the advantage of daily contact with the other. Consequent failure of the employer and employee to understand each other has caused the growth of class feeling between capital, or its representatives, and labor, with the accompanying tendency on the part of both to view each other’s acts with suspicion and to look on the gain of one as the loss

of the other. It has thus been impossible to achieve the results which might have been expected had labor and capital held the proper attitude with respect to their common task. The development of this attitude is the responsibility of the management. There is only one method by which this can be done and that is through the provision of proper incentives for the worker.

**Definition.**—An incentive, in the commonly accepted usage of the word, is an impulse, a motive, a stimulus; that which incites or tends to incite to action. The scope of the term is almost unlimited; it may be applied to any factor, material or non-material, which will impel, urge, incite, or encourage an individual to activity in whatever undertaking he may be engaged. The primary consideration with respect to an incentive is the psychological effect. Man, by nature or because of previous training, responds in certain ways to the stimuli afforded by a certain situation or group of situations. His every reaction, whether mental or physical, is the result of these stimuli. The incentive may therefore be regarded as a force which acts on the mind of the worker and, through its effect on him, ultimately produces either physical action or the development of a definite attitude.

**Types of Incentives.**—There are three general types of incentives which can be used to stimulate the worker—non-material, semi-material, and material. Each of them produces a different kind of reaction. The most satisfactory results are obtained only when there is a wise combination of these three types in the organization.

Non-material incentives include such stimuli as personal interest in workers, an appreciation of their efforts, and a recognition of their problems and points of view. These stimuli are, for the most part, embodied in the attitude of the administrative and executive officers toward the workers. Their purpose is the development of a spirit of loyalty, an *esprit de corps*, a confidence, and a unity of effort which will bind together the personnel of the entire organization, enlist its hearty cooperation, and make the worker feel that he is a vital element in it. Non-material incentives are designed so to stimulate the worker that

he will do not only those things for which he is definitely responsible, but also those for which he cannot be so held.

Semi-material incentives comprise proper placement, pleasant working conditions, steady employment, a sound training system, opportunity for advancement, and other similar factors. These are the incentives which must be present in order to offset the loss of opportunity for creative workmanship. Interest and contentment in the work must be generated from sources other than the actual work itself—this is primarily the task of the semi-material incentives.

Non-material and semi-material incentives have a tremendous effect on the attitude and consequently on the productivity of the worker, but they cannot be fully effective unless combined with a third type—the material incentives. The strongest incentives are those which appeal to the self-interest of the individual, and they are the ones to which he reacts most quickly and forcibly. With labor the basic appeal to human self-interest is to be found in those systems of wage payment that enable the worker to increase his earnings by increasing his output. Even the unintelligent employee, on whom the non-material and semi-material incentives probably have but little effect, can be stimulated to further energy by the prospect of an additional monetary return. Financial incentives, in the last analysis, are the ones most generally effective. Upon them as a foundation the rest of the incentive structure must be built, for without a satisfactory wage system all other incentives lose their force.

**Morale—The Product of Incentives.**—An adequate incentive system includes the non-material, the semi-material, and the material incentives, and its efficient operation brings about the development within the organization of a deep sense of loyalty and a sound *esprit de corps*—in brief, a healthy morale. Morale, to use an idealistic expression, is the very soul of a business—that element which quickens its vitality, and welds into an unselfish and voluntary cooperation toward a common goal the varied interests of the members of an entire personnel group. Originally a military term, it is equally applicable to a business organization, in which is to be found the same fundamental situation, namely, large groups of men working for a common purpose under the direction of leaders.



The intangibility of morale and the broad significance of the term make it difficult to analyze. It has, however, three general elements: loyalty, "will-to-do," and cooperation.

*Loyalty.*—Loyalty is that part of morale which contributes a "my company" spirit in the employee, evidenced by the feeling that "his" concern is the best one for which to work. Loyalty is the very groundwork of *esprit de corps*. It is because of loyalty that the worker is personally attached to the organization, that he feels the desire to abide by the direction of its leaders and to further its interests as well as his own. Loyalty cannot be developed by force; it is not inherent in the relationship between the worker and the management, but must be developed by sincere and consistent effort on the part of executives.

"*Will-to-do.*"—A second essential factor in morale is the "will-to-do." This term signifies the willingness, it might almost be said the eagerness, of the individual to work both for himself and for the concern. A mere passive allegiance to the organization, unless combined with other forces, would be of little value to the business. The "will-to-do" implies a spirit of action, not merely an inactive sentiment which perhaps causes the employee to forego certain acts which might be detrimental to the business, but a sentiment which makes him work energetically for the success of the enterprise, and is, in itself, productive of results.

The "will-to-do" manifests itself in a number of ways. The first is through *interest* in the job, which usually comes from satisfaction of the individual with the work that he is doing. This may not be the result of the worker's performance of a single task within the concern, but may come from his knowledge of its combined process and of the product which his effort helps to make. To stimulate this interest to the fullest extent, there should be in the mind of the worker a definite connection between the part which he plays in the functioning of the organization and the ultimate output. Coincident with this interest is the exercise of *initiative* by the worker, the development and application, wherever possible, of original ideas for improving his workmanship. Initiative presupposes interest, and even in the case of routine activities results in the tendency to devise new methods of performing necessary operations and to accept willingly improvements in machinery and processes. It prevents the

worker from getting into a rut and directs his interest into profitable paths. The third phase of the "will-to-do" is *energy*, without which interest and initiative would be wholly ineffective. Energy is the means by which these qualities are put to practical use. Unbounded interest in a task may provide the impulse toward initiative, and initiative may make the first move toward the accomplishment of a definite end, but only energy can overcome the obstacles and hardships in the way of reaching that end, and induce the sustained effort requisite to its attainment. Interest, initiative, and energy are inseparably combined in the "will-to-do," the most dynamic factor in morale.

*Cooperation.*—A third element of morale, which may be called a contributing factor to the "will-to-do," is cooperation. The individual activity resulting from the "will-to-do" is of little value unless it is coordinated and directed toward a common end. Since the ultimate goal of the business can be reached only through collective action, the morale which contributes to the accomplishment of that goal must necessarily be characterized by cooperation. The individuals, in whom this willingness to work together is developed, are disposed to adapt themselves to prevailing conditions, to control their likes and dislikes, and to compromise with others in performing their tasks. Cooperation means teamwork, a binding together of the efforts of the workers. It is an indispensable adjunct to loyalty and the "will-to-do" in the make-up of morale.

**Why Incentives are Necessary.**—Incentives are necessary because they secure the interest of the working force and build up its morale. This becomes tremendously significant when it is realized that morale is as essential to the mental health of the personnel as good bodily condition is to its physical health. An employer can no more expect satisfactory performance from a personnel lacking in morale than he can look for good work from individuals who are not physically fit. The modern employer protects the physical well-being of his workers by providing healthful working conditions, physical examinations, medical attention, and other similar devices. He should take equal pains to maintain the mental health of his working force by providing direct stimuli to the proper mental attitude.

Practically all men desire cooperative action. They want to belong to groups having a common interest. This desire is shown by the prevalence of such bodies as lodges, societies, clubs, and associations. People want to work with other people, to follow leaders, to make those leaders great. In the business concern, this cannot be done unless the organization can arouse the workers to a genuine interest and unless its leaders can inspire their loyalty. The average business organization does not, in itself, contribute to the satisfaction of the desire for cooperative action. Its attitude is so extremely individualistic, so personally self-seeking, that morale cannot be developed without special effort. The ordinary impersonal wage contract has no tendency to bind the workers together. Each individual is interested only in the amount and the security of his own return, and is but little concerned with its source (other than in connection with this security), or with those who share in the payments of the company. It is the responsibility of incentives to provide other means for creating the desired group spirit.

*To Eliminate Friction in the Organization.*—The urgent necessity for an adequate incentive system within the organization is attested by reasons too numerous to mention with any completeness in this discussion. Consideration of a few of its most significant effects should suffice. Perhaps the most outstanding service of the morale developed through an adequate incentive system is the elimination of friction in the organization—friction between the management and the workers, and friction among the workers themselves. Discord is the result of failure to cooperate. Where the proper incentives have awakened in the working force a collective interest in the success of the undertaking, there will be no clash resulting from effort at cross-purposes, “family feeling” and discord between workers cannot be coexistent in the organization.

Friction between management and employees is manifested chiefly in class feeling. Its elimination quickly follows the development of morale. The realization on the part of the workers that the management has taken sufficient interest in them to provide adequate incentives, ranging from the material to the non-material, from incentive wage payments to sympathetic leadership, is in itself a potent factor in breaking down their

distrust and suspicion. Morale as evidenced by *esprit de corps* contributes to the harmony of industrial relations by welding together the viewpoints of management and workers. Where a friendly feeling exists, the keynote of the relationship between the two is mutual concession. The confidence of the workers in their higher officers makes them willing to take the management's point of view into consideration and to submit to rational discussion the many problems which are continually arising. The confidence of the employer in his men impels him to take their viewpoint into consideration and to give to their problems interested attention. The whole situation is one of "give and take," and its value cannot be overestimated.

*To Increase Amount and Quality of Production.*—The provision of adequate incentives also has a beneficial effect on the product of the organization. Financial incentives, by making the worker's pay proportionate to the results which he produces, stimulate him to increase his output. And, while the tendency of the wage incentive is to increase the *amount* of production, the tendency of the semi-material and the non-material incentives is to improve every phase of what may be called the *quality* of production. The wage incentive is the first requisite to efficient performance; for the average worker, when he is paid according to what he produces, has no quarrel with the management and will usually admit that he is getting a square deal. But it is the other incentives which actually awaken his interest in the organization and impel him to do good work. No system of inspection, however rigid, is able entirely to eliminate poor work; a certain amount is always sure to be overlooked. Quality of product ultimately depends upon the workers, and their workmanship is conditioned to a great degree by their attitude toward the company. Moreover, the indifferent employee is careless not only with respect to the quality of his workmanship, but also with respect to his use of materials and equipment. Wasted material, damaged machinery and tools, and increased overhead which results from the failure to use equipment to its full capacity, mean little to him.

Lack of interest in the work and in the company, as manifested in a lowered labor efficiency, is a definite, though intangible liability of the business, just as goodwill is an intangible asset.



It does not appear on the balance sheet as a specific liability, yet it is daily evidenced in the increased costs of operation just as surely as the interest due on the company's debt accrues regularly, though imperceptibly, and must ultimately be paid. The danger is that the management, not being able to place a finger on any definite and tangible expense, may fail to realize that it is the absence of morale which is hindering the efficiency of the business, and thus may consequently neglect the establishment of the proper incentives.

*To Reduce Labor Turnover.*—A third essential service of adequate incentives is the reduction of labor turnover. As previously mentioned in Chap. III, excessive labor turnover is one of the most costly factors in industry, both because of the actual added expense of selection and training which it entails and because of the inefficiency of operation which is a concomitant of constantly changing personnel. By combatting this evil, incentives give to the concern a competitive advantage over other employers of labor, since they constitute a force which tends to hold the worker to the organization.

The company spirit developed by incentives is of inestimable value especially in times of labor disturbance. Essential under normal circumstances, it is doubly necessary during such difficult periods. In the life of almost every business, there are certain instances in which the wholehearted cooperation of the workers is imperative in order to keep the concern on its feet. Unless a feeling of loyalty has been created, there is nothing to prevent, at such a time, purely selfish action on the part of the workers with utter disregard of the consequence of their acts and of the effect of these acts upon the company's interests. Morale is the means of preventing this indifference. It is often one of the most influential factors in holding men during a strike, or in inducing them to support the concern when it is in a difficult position.

Repeated experience has established beyond a doubt the value of incentives through their assurance to the business organization of a contented, as well as a stable and productive, working force. The old idea was that it made little difference whether or not the individual was happy, as long as he could be made to work. Employers are now realizing that only from contented

workers are satisfactory results secured, and that anything which contributes to their happiness is of definite value. Incentives are considered a necessity from an ethical as well as from an economical standpoint.

**Establishing Incentives.**—With respect to developing morale within the organization, that is, with respect to the character of the incentives which should be utilized to produce the desired goodwill, there are two opposing viewpoints. One is that of the idealist, who believes that the desire to work can be inspired in men merely by developing their interest in the work and by stimulating them with non-material or semi-material incentives. The other is that of the materialist, who believes that the only way to get any increase in effort from the employees is to offer them increased material, or financial, return. Neither of these viewpoints can be accepted absolutely. As regards the first, it is manifestly out of the question to expect men to work for the mere love of work, irrespective of the size of their pay envelopes. It is almost equally impossible to look for maximum output from men who are offered no incentive other than wages. Experience has shown that best results are obtained where there is a wise and judicious combination of these two points of view.

The responsibility for the development of the proper incentives lies with the administrative and executive officers of the organization. They are the ones who must devise methods to foster goodwill and happiness in the concern and to keep the productivity of the workers at its highest pitch. It is necessary for them, first, to investigate and analyze conditions existing within their organizations, and then to adopt the incentive system to fit their particular needs. No set rules to apply to the establishment of company spirit in every organization can be formulated. There are the three general types of incentives previously referred to—non-material, semi-material, and material—some of whose various forms are used for this purpose in all organizations which devote special attention to developing the desired state of mind in their workers.

**Non-material Incentives.**—Non-material incentives were neglected during the period of emphasis on the development and perfection of the wage incentive, but they are again coming to

the fore with the growing realization that money alone will not bring out the best in the worker.

**Executive Goodwill.**—Primary among these non-material incentives is the maintenance of an attitude of faith and goodwill on the part of the administrative and executive officers. Goodwill begins at the top. It does not grow from employee to employer, but from employer to employee. The attitude of the men at the head of an organization is reflected throughout its personnel—each member of the organization “takes his cue” from them. Their attitude must be characterized by sympathy and understanding, by sincerity and good faith, for morale built upon selfish motives is but short-lived. Duplicity on the part of the management is invariably detected by the workers. Unless the head of the organization has a wholehearted interest in the welfare of his men, it is far better for him to keep away from them, because there is nothing which so breeds disgust in the worker’s mind as a double-dealing, “sympathetic” manager.

**Courteous Treatment of Employees.**—Nothing is more essential to the maintenance of morale in the organization than a consistently courteous attitude on the part of its officers toward their subordinates. Regardless of the necessary differences in rank and authority possessed by the various employees of the concern, each should be accorded the same considerate treatment. They are all human beings and expect to be treated as such. The worker responds quickly to friendly and tactful treatment from executives, but his reaction to an overbearing, autocratic manner of approach by a higher official is anything but favorable. The natural result is a sentiment that “he doesn’t care anything about me; why should I care anything about him?” Contemptuous treatment of workers by their superiors breeds discontent and friction in the organization, whereas consideration and courtesy make for loyalty and interest.

**Expressed Appreciation of Good Work.**—A still more forceful stimulus to the goodwill of the worker is expressed appreciation of worthy accomplishment. It is a natural human characteristic to desire credit for work well done, and if the employee feels that his efforts are not being recognized, he quickly loses interest in his job. If his good work is disregarded, he has no incentive to continue it. But a few words of praise where deserved will do

much to encourage him. Consider, for instance, the effect on the machine tender when his foreman in passing slaps him on the back and says, "Well, Bill, she's sure working pretty for you! The inspector didn't cut out a single piece in that batch you sent out yesterday." There are few men in whom such an expression of appreciation will not awaken a desire to keep up to the standard which has won them praise. "Bill" will not ruin his reputation by sending out poor material. He is more likely to work a little harder. As the success of an organization can be attributed to no one man, but depends upon the cooperation of each of its members, so it follows that the credit for accomplishment belongs also to all those who have contributed to that success. Bestowal of credit where it is due gives to the worker a sense of having a real part in the activity of the concern. Encouragement develops a pride in achievement which is more productive than any amount of coercion.

**Cooperation of Foremen.**—The attitude of the administrator and the chief executive must be transmitted to the worker without any break in the flow. That is, the spirit of the president and the general manager must extend continuously downward through every official of the organization until it finally reaches the worker, in this way binding together the whole concern. The foreman is the most vital link in the chain, since he is the one who directly connects the management and the men. The workers see expressed in him the attitude of the higher officers, a fact which places a tremendous responsibility on his shoulders. He holds an unequalled opportunity to stimulate the workers through constructive leadership and approbation—to draw the best out of each individual. He should be selected with respect to his ability to take advantage of this opportunity, and trained to inculcate in his men the spirit of the organization. The foreman who is willing to teach and train his men, who has won their confidence and cooperation, is one of the best preventives of labor trouble, labor turnover, and inefficiency. The foreman who has failed in this respect constitutes a weak link in the chain connecting management and workers at the point where it should be the strongest.

**Personal Contact between Employer and Employee.**—Although indirect transmission of the attitude of administrative



and executive officers to the workers plays an important part in the development of company spirit, actual personal contact of these men with their subordinates is even more effective in this respect. Managers are beginning to realize that they will develop more loyalty by keeping closer to their working force and displaying a more sincere interest in the results secured. But it is unwise to go to extremes in becoming friendly with employees; the officials of the organization should take care not to arouse jealousy or possible accusations of favoritism, nor to extend the principle of personal contact so far that prestige is lost. They can present their "human" side to those under their direction and control, can lend a sympathetic ear to their troubles, and can offer them encouragement and advice, without losing either respect or authority. Personal contact of this type is an unfailing source of goodwill.

**Recognition of Workers' Interests.**—Recognition of the group and individual interests of the workers is another factor in maintaining *esprit de corps*. With respect to such interests as hours, working conditions, and, to a certain extent, wages, the employee is willing to be identified with his fellow-workers and to receive the same consideration accorded to them. In the matter of wages, the group interest prevails in so far as the *basis* of the payment is concerned, but the actual *amount* of return is an individual interest, manifested in the desire for payment according to results. But the worker also desires that he be given consideration as an entity distinct from every other person in the organization. The particularly individual interests comprise mainly factors relating to well-being or welfare outside of the organization. The concern which creates a bond between itself and its employees other than that existing simply as a result of the relationship of employer to employee is making the highest possible bid for loyalty and cooperation. A friendly interest in a worker's personal affairs, provided that it does not become intrusive or paternalistic, makes him feel that he can look to his executives for constructive aid in the solution of problems concerning his life outside the organization as well as within it.

**Leadership.**—Almost every one of the foregoing non-material incentives is included in the term "leadership." This is the factor through which they are given expression. Company

spirit does not mean loyalty to the organization as an impersonal and inanimate body; it means loyalty to the administrator or the executives of that organization. This attachment will exist only when the leader provides, through his actions and attitude, those non-material incentives which gain the confidence and cooperation of the men under him. Leadership requires a strong personality and the ability necessary to secure admiration and respect. The employee is doubly willing to accord support to the executive who has shown ability by attaining success, since this success is proof of the efficiency of the methods used. The presence of non-material incentives in the organization is wholly dependent upon the administrator and the executives, who can by their action and attitude build up or destroy morale.

**Semi-material Incentives.**—The second class of incentives—semi-material—affect the employee mainly through external means. They contribute principally to his physical comfort or material advancement and indirectly have a salutary effect on his mental state. This does not necessarily imply that any immediate and tangible reward is offered to the worker as an inducement; but it does mean that attention is given to the establishment of conditions which are conducive to his well-being and satisfaction.

**Proper Placement.**—The first requisite to the happiness of the employee, and one of the outstanding semi-material incentives, is proper placement. The force of this incentive—the right man in the right place—and its necessity, have been discussed in Chap. III. The two fundamentals of “Right Man” and “Incentive” are inseparably connected: It is practically impossible to develop either material or non-material means which will effectively stimulate the man who is dissatisfied with his job and uninterested in its activities. The discontent of the misfit worker is a serious impediment to the operation of an incentive system. But proper placement brings about a balance between ability and responsibility and provides an interest in the work which becomes, itself, a powerful incentive.

**Introduction to Job.**—The introduction of the individual to his job, and his education and training for that job, are considerations which logically follow his selection for a position in the organization. The introduction of the new employee into the concern is a more important matter than most employers realize.

The majority of employers hire a man and expect him, without assistance, to adapt himself to conditions in the organization as a whole and to those of his particular job. Thus the worker too often starts out handicapped by ignorance and lack of confidence. A little personal interest and special attention at the outset will prevent this difficulty.

**Education and Training.**—In the beginning, intensive personal attention is required, but the employee should not thereafter be left entirely to his own devices. The beneficial results of his proper introduction into the organization can be made secure by provision for a continuous and constructive program of education and training. This is not a service which benefits employees alone. The increase in efficiency which results makes it to the distinct advantage of the management to offer this incentive to employees. Education and training open up possibilities otherwise unavailable to the worker. In the first place, careful instruction of the individual in the methods and processes involved in the job which he is occupying enables him to perform its functions with greater speed, accuracy, and skill; with less waste of materials and wear and tear of equipment; and with greater results for the same amount of effort. In the concern where the wage payment is in proportion to results secured, he is consequently able to obtain a higher rate of return than he could in an organization without any definite training plan. In this way the semi-material and the material incentives are combined, and the stimulus thus provided is doubly forceful. In the second place, training sets up for the worker the goal of possible advancement. If he has no opportunity to gain further knowledge of the systems and methods of the organization, and no chance to learn the work of the jobs ahead of him, the employee's hope of promotion is little more than a gamble, for even in the event of a vacancy in a higher position, he would be but inadequately prepared to step into it. Systematic training both increases the worker's opportunities in his own job and fits him for the one ahead.

**Regular Promotion System.**—To get the full value of the training incentive there must also be provided the incentive of a regular promotion system. Otherwise, the force of the stimulus created by instruction is greatly diminished. There should be a

fairly regular path along which the employee who shows ability can progress as he becomes fitted for advanced work and as vacancies occur. Furthermore, the worker should have the assurance that when a position ahead of him is open, his ability and experience will be given due consideration in the selection of a man to fill it, and that an outsider, a "member of the family," someone who has a "pull," or who has succeeded in securing the attention of the management, will not be arbitrarily put in over his head. In the advancement of men from within the organization, ability, not seniority, should be the major determinant. Other things being equal, seniority should have a certain weight in the decision, but as a rule ability is the individual's basic qualification for advancement. The measure of this ability should be an adequate system of employees' records, and promotions should be made on the basis of these records rather than on the sole basis of the personal opinion of the executives. When the worker realizes that such a promotion policy is consistently maintained, and that his chance to go up in the organization depends entirely upon himself, his enthusiasm and desire to do satisfactory work are greatly increased.

**Steady Employment.**—One of the strongest of the semi-material incentives is steady employment. Certain businesses, by reason of their seasonal or semi-seasonal character, and others, because they do not sufficiently plan the year's work, offer but temporary or irregular employment to a large percentage of their workers. They have rush periods in which they are forced to take on extra men temporarily, and slack periods when these men must be laid off. This recurring turnover of labor is in itself a heavy cost to the concern. In addition, it is a severe handicap to the organization in getting the most desirable type of labor—that labor which ordinarily goes into a position with the idea of staying in it, and consequently develops a spirit of company interest, and *esprit de corps*. The concern which is continually laying off men has an undesirable reputation in the labor market, and usually attracts that type of shifting worker who looks upon his job as merely temporary, feels no loyalty to the organization, and makes no effort to secure the best possible results. But the concern which so plans its work as to offer steady employment, and which can impress upon the employee the idea that his job with



it is a life job, is offering one of the strongest possible incentives to loyalty and the "will-to-do." The man who feels secure in his position and does not have constantly before him the fear of being laid off, tends to identify himself with the organization. He develops a sense of proprietorship in his job and takes pride in making the most of its possibilities. The great majority of organizations can, if they will take the trouble, assure at least fairly steady employment for both plant and employees through proper planning of operation and the development of complementary seasonal products.

**Standards of Performance.**—The impetus to consistent effort afforded by security of employment can be still further augmented by the establishment of standards of performance toward which the employee can work. The mere fact of having a definite goal is an incentive to increased effort. And besides, the worker is spurred on by the knowledge that unless he reaches the standard set by the management he will have failed for the time being. Conversely, when he does reach it, he knows that the management, having in the standard an accurate measure of performance, is actively aware of the degree of his ability. The worker who has once reached a certain level of efficiency ordinarily strives to maintain his performance at that level, or at least to repeat his attainment of it. His pride impels him to "show" his superiors and those with whom he is working how much he can do and how well he can do it. This is especially true when the wage received increases in proportion to output. The worker is stimulated by pride in achievement, by desire for approbation from the management and from his fellow-workers, and by eagerness for increased material gain. Standards of performance afford a definite basis for these stimuli.

**Contests.**—Somewhat the same incentive is offered by contests of various types in which the employees of the organization may participate. The endeavor to win a contest or to make a commendable showing in it results in an increase of effort on the part of the employee. This increase may be, to a certain degree, of a temporary nature, but, as in the case of the standard of performance, the employee is awakened to a knowledge of what he can do and how much he can earn, and usually attempts to repeat his performance, in order to maintain both his reputation

and his wage. The danger to be avoided in holding contests is the possible development of antagonism through playing departments or individuals against each other. The proper spirit of friendly competition must always be preserved if the value of the incentive is to be realized.

**Employee Representation.**—The increasing freedom of the worker made possible by the present system has made it practically essential to establish a definite organized relationship between the employees and the management, and to give the former a part in the control of those conditions which affect their relations with the concern. The manager who has established a system of employee representation has taken the first step toward eliminating misunderstanding and securing cooperation. Possession of the right to exercise his judgment in the solution of some of the problems of management which concern him gives the worker a sense of responsibility which stimulates his interest in the concern and enlists his best efforts for its welfare. The form of organization for employee representation will necessarily vary according to the business for which it is designed. But practically every plan comprises equal representative bodies from workers and management, which meet together for the settlement of problems affecting labor, such as wages, hours, working conditions, safety provisions, sanitation, discharge, etc.

**Good Working Conditions.**—Good working conditions offer an incentive whose force is now almost universally recognized. From the point of view of the contentment of the worker alone, their beneficial effect would be sufficient to warrant careful consideration of the matter by the management. Pleasant and convenient surroundings during working hours inevitably raise the morale of the employees, while unattractive and inconvenient conditions breed dissatisfaction and discontent. This is due not only to the effect on the mind of the worker, but also to the effect on his physical well-being and his efficiency. Damp, poorly lighted, poorly heated, and ill-ventilated working quarters create an additional strain on employees and are a primary cause of the unnecessary fatigue that eventually lowers their vitality and their ability to produce. Likewise, badly arranged or inferior equipment prevents the employee from functioning

with the greatest possible efficiency—a disadvantage to both management and worker. Although legislation has compelled the provision of fairly satisfactory working conditions, there still remains, even after the laws with respect to safety, sanitation, etc., have been complied with, considerable room for improvement. Something more than bare compliance with the law is necessary if the working conditions are to be an attraction and an incentive to the employee. They should be as pleasant and as comfortable as the nature of the work permits. This point is emphasized by the realization that the worker spends more time on the job than he does in his own home.

**Company Service.**—Just as a company renders a definite type of service to its customers in order to build up reputation and goodwill, so should it render service to its members, who play an even more important part in its success. To this end, many concerns have included among their semi-material incentives those which come under the head of company service. With the exception of the material incentives, these are the ones which have the most immediate and forceful influence on the worker entering the organization. They include such elements as health service, recreation facilities, housing, and other similar factors which have a direct bearing on the comfort and happiness of the employee, both at his work and away from it. For some time, provision of those incentives was commonly called “welfare work,” but this term has been discarded by a majority of concerns, because it carries a significance unpleasantly suggestive of paternalism, which is distasteful to the worker and makes him antagonistic to the activities carried on under this head.

**Health Service.**—Care of the health of employees constitutes a branch of company service which, besides affording the concern assurance that its working force is being kept in good condition, plays an important part in furthering the contentment and loyalty of its men. It is true that many workers look upon the introduction of health service with suspicion, and regard such measures as physical examinations as an attempt on the part of the management to weed out certain workers. This distrust can be overcome by explaining to the employees that the sole purpose of the service is to help them by maintaining their physical well-being and to avoid any possible injury by determining the extent

of their capacity. The good health of the workers is the very foundation of their productivity, their contentment, and their happiness. Realization of the value of the healthy and contented worker has led to the development of various means of caring for the health of employees, from the safety-first cabinet of the small shop to the fully equipped hospital of the large organization. All have been established with the same end in view—to afford, within the organization itself, an agency which will care for the injured worker and guard against any contingency that might undermine his well-being.

*Recreational Facilities.*—Personnel maintenance, as well as the development of company spirit, may be furthered by the provision of different types of recreational facilities which the employees may enjoy during their leisure periods. Nothing is more conducive to a “get-together” attitude on the part of employees than association with one another outside of working hours, in athletics and in other forms of recreation. The more chance they have to play together, the better they will work together. Furthermore, the provision of definite opportunities for utilizing spare time to advantage in physical or other recreation greatly benefits the employee who might otherwise fail to make the best use of his unoccupied time.

*Housing.*—Many concerns have devoted considerable attention to housing development. The incentive offered through home ownership has been found materially to reduce labor turnover, and to strengthen the morale of the workers. A pleasant home undoubtedly influences the worker to stay with the company which has helped him to buy it or to enjoy it at a reasonable rental. The man thus warmly disposed toward the concern is more permanent than the one whose main incentive to a continued stay is his pay envelope. Moreover, the employee who can relax after working hours in pleasant surroundings is more ready for work on the next day than the one whose home contributes little to his comfort. Housing development should be on a commercial and not a philanthropic basis. The initial expense to the concern may be fairly high, but if the project is properly administered the ultimate cost need not be appreciable, since a possible financial deficit will be more than offset by the advantages which will accrue from goodwill and stability.



**Company Paper.**—Within the organization itself, the company paper can be made an effective means for the creation of goodwill, especially in mercantile organizations. It serves, in general, two main purposes: (1) that of developing cooperation and fellowship among the men themselves; and (2) that of establishing a medium of communication and a bond of interest between the management and the men. It serves to keep each part of the organization informed as to what all the other parts are doing, and in this way stimulates “family feeling” among employees. It helps to bridge the gap between employer and employee by providing an organ through which the workers can express their ideas and desires to the management, and through which the management can explain its plans and problems to the workers. The paper should not become merely the mouth-piece of the management, but should stress especially those things in which the employee is directly interested, whether they concern the business itself or the outside activities of the workers. The plant paper can do much toward establishing a community of interest throughout the organization.

These are the outstanding semi-material incentives which have demonstrated their value as stimuli to goodwill and company spirit. Together with the non-material incentives, they constitute the factors which give the concern that offers them a differential advantage over other concerns in which the wages are equally attractive but in which other incentives have been neglected.

**Material Incentives.**—Yet, effective and essential though the non-material and the semi-material incentives may be, their importance is overshadowed by that of the material, or financial, incentives. In the last analysis, the greater part of individual effort today is directed almost solely toward material gain. The wage of the worker is his primary consideration, and the dominant incentive to his activity is the wage payment. The embodiment within the wage system of actual incentive factors which will effectively stimulate the individual to maximum output is one of the foremost problems of modern organization. Consideration of this problem has been a comparatively recent development, and, except in rare cases, no real wage incentive has been offered. The day wage was, and is still, paid because of its simplicity,

ease of computation, and traditional use. Workers are rewarded for the time they spend in the organization rather than for the results which they produce. They have always been docked for losing a day, but not for soldiering all day long. Under the simple day wage system, the man who does more than the minimum required to keep his job receives no more than the one who does barely enough; the result is a tendency to level the productivity of the whole group to that of the least efficient worker. No real incentive to increased effort is provided for the employee, other than that offered by such non-material rewards as pride in achievement, interest in work, desire for creative accomplishment, or opportunity for promotion. Without an added wage incentive, these are not strong enough to maintain production at a desirable level, except where the work in question is being performed by highly skilled and intelligent workers; upon these such influences have a marked effect. Otherwise, results are to a great extent dependent upon the rigidity of the supervision which is exercised, upon the "drive" exerted by the management, and the value of the possible increase in results is too often offset by the antagonism which develops as a consequence of the methods used by the management.

**Need for Application of Science to the Wage Problem.**—The most pressing need at the present time is the further application of science to the wage problem. Before the heart of the question can be reached, before any satisfactory incentive plan can be formulated, it is necessary to measure accurately the hitherto roughly calculated elements which enter into the determination of the proper wage for the various types of labor, and to reduce conditions within the organization to a state which approaches, as nearly as possible, that which is ideal for the accomplishment by the worker of the desired results. That is, if the worker is to be held to a certain standard of performance, it is essential not only to determine that standard scientifically, but also to give equally detailed consideration to every factor which affects him in his attempt to attain that standard. For example, the determination of how much the employee should do in a certain period of time, how he should do it, and under what conditions, is more important than the determination of just how he should be paid; for any wage system, even the day wage, will be more satisfactory

when administered on the basis of this knowledge than another system in which this information is lacking. Other things being equal, the value of the wage incentive depends almost entirely upon the accuracy with which the aforementioned factors are determined.

**Preparation for Establishment of an Incentive Wage System.—**

An incentive wage system, if it is to produce satisfactory results, requires that certain definite steps be taken before it can be scientifically and intelligently applied. The first is an analysis of the physical plant. This involves a study of the best methods of plant layout, in order to facilitate efficient routing of the work, etc.; a study of machinery, for the purpose of selecting the right types of machines, determining the speeds at which they should be run, and getting them into 100 per cent condition; and the selection of the tools, jigs, and accessories of production which will be best suited to the processes involved. At this time also, standard materials must be decided upon, with the object of furthering uniformity of operation and output. Along with this step comes the determination of the best methods, which is accomplished by comparative analyses of the various methods used in other plants as well as in the particular plant itself, and which is carried out by means of detailed time studies of all the elements of each job. The next step comprises the establishment of an organization which provides a complete planning system with the proper type of functional direction and supervision. This is to insure that there will always be men responsible for seeing that all the mechanical factors are in order; that planning, scheduling, and dispatching are efficient; that instruction is provided to teach the methods which have been established and to continually give assistance to those workers whose performance is weak in any respect; and that inspection is provided for by an individual not engaged in actual operation.

On the basis of these preparations, equitable standards of performance can be established, the standard being set at the level of efficiency which the comparative time studies of each elementary operation have shown that the average man, with proper training, should be able to reach under the improved conditions. The final step is the gradual training of the workers in the standard methods, this being done by members of the

organization selected for the purpose. The plan as outlined virtually involves a reorganization of the whole concern. This reorganization should not be drastic but gradual. It should be in the hands of a man capable of directing the work, but the changes themselves, so far as possible, should actually be made by the men in the organization, through a process of building up physical conditions so that the standard methods can be developed gradually and accepted without question by the workers.

The particular incentive wage system finally selected is immaterial so long as it is one based on a scientific determination of the standard amount of work that should be done during a certain period of time, accompanied by conditions of operation so organized as to facilitate the performance of the work in that time, and put into practice by an individual who really understands its underlying principles and can adapt them to the particular characteristics of the organization to which they are being applied. In this discussion, the primary purpose of which is to indicate the nature and type of available incentives, it would be not only impossible but also unwise to attempt even to outline, except in the brief manner given above, the preliminary work which precedes the establishment of the standard, or to discuss the various wage systems as to either their method of application or their advantages and disadvantages. Those who are interested can draw upon the great mass of excellent material to be found in the industrial management magazines and in detailed treatises on this subject.

**Principles of a Sound Incentive Wage System.**—But, in order to clarify the conception of a satisfactory wage incentive, a brief statement of the principles underlying a basically sound incentive wage system will not be amiss. The first essential is that the day wage be guaranteed. The average worker cannot afford to have the basic amount of his regular daily earnings uncertain and subject to conditions which are beyond his control. Moreover, the guaranteed day wage is necessary in order that the penalty of unreasonably low wages may not be imposed on new employees while learning the job, or on old employees in the transition from day workers to “standard workers,” or from one type of work to another. The system must offer some inducement besides a day wage since this alone will not stimulate



the worker to put forth any extraordinary effort. There must be an opportunity to increase his earnings decidedly above the ordinary day rate. The additional return, furthermore, must be recognized as the direct result of the worker's effort, so that he will not look upon it as a gift from the company; and it must be immediate, so that he will not have to wait for evidence of the fruits of his increased output. "Immediate" does not necessarily mean that the payment should be computed on the basis of each job, or even daily, since this allows for intermittent "raiding" and "soldiering," but on a weekly or semi-monthly basis of total time versus standard time.

In their attempt to embody all of these principles, many of the incentive wage systems have become exceedingly complicated and the resultant loss of simplicity has caused a difficulty of administration that the anticipated increase in output and technical accuracy has been insufficient to offset. The failure of such systems has frequently been caused by the inability of employees to understand and to have confidence in their operation. It is highly desirable that the plan be simple enough to allow the worker to compute his own earnings and to verify the wages which he receives. This will assure him that the management is not taking advantage of him through the operation of some involved system. A final and fundamental requisite of the adequate wage incentive is that it be offered in the right spirit, not with the idea of exploiting the worker by offering him the chance to earn increased wages, and then cutting rates when his pay gets a little too high to suit the management, but with a view to actually sharing with him the results of his increased effort. The basic principle of the system should provide for such careful formulation of rates that there will be no necessity of cutting them—it should not tolerate such a practice.

**Method of Payment.**—The incentive wage system which is properly installed, and in which rates have been determined on the basis of the standard time required to complete a job, permits payment of the worker on either a time or a piece-rate basis; but where the piece rate is used, it should be established on a time basis. It is possible either to pay a man so much per piece, or to allow him a certain amount of time for doing a job, paying him at a high rate if he succeeds in completing it in the

allotted time, and increasing this rate accordingly if he does it in less time. For instance, if it has been determined that the standard time for doing one piece is an hour, the standard output for an 8-hour day should be eight pieces. If a man reaches the standard, under this system he will receive the guaranteed day wage plus a bonus ranging from 30 to 60 per cent of his wages, according to the character of the work. If he goes over standard, his additional work will be paid for on a piece-rate basis.

This last provision introduces a difficulty which has frequently been cited as an outstanding disadvantage of incentive methods of wage payment. The additional incentive offered causes an inevitable tendency on the part of the worker to do his job at a rate faster than that which has been scientifically determined to be correct. This is a disadvantage both from his own point of view and that of the company. The worker himself suffers through the tension and overstrain of his forced endeavor; the company suffers because too often quality is sacrificed to quantity, and because, even though the machinery is in 100 per cent condition and the speeds are scientifically correct, and the tools are right, there is bound to be unnecessary wear and tear on machines.

This disadvantage of "speeding up" is not necessarily inherent in the system and can be eliminated without loss of the incentive force. It is logical to say that, no matter what the type of work, if the times are established accurately, they are the *right* times, and that the standard for a day is the amount of work which should be done in that day. On this basis, there should be no incentive given for doing work beyond the amount designated by the standard. To this limitation the objection may be raised that within a large group, the men will be of varying capacities, and that some will be able to do more than others, so that the standard will not be equitable for all in the group. But this criticism is not sufficient to undermine the value of the system. If within the group there are certain individuals who are able to do more work easily, and without injury to themselves, their increased production will be a means of drawing the attention of the management and showing themselves as exceptional workers, so that they may be placed at work which, on account of the increased skill or speed which it requires, commands a correspondingly higher wage or bonus. For the incentive plan

based on the foregoing principles, there should be little question of successful operation.

**Personnel Policy.**—The foregoing incentives, to be most effective, should be embodied in a specific and comprehensive personnel policy which is given as much publicity as possible. This places the organization definitely on record before its employees and the public as upholding the observance of certain basic principles which analysis of its personnel problems has shown to be sound. Such a policy is of the greatest value in creating morale and company spirit. It provides tangible evidence of the goodwill of the management. A specific personnel policy serves two general purposes: it gives the management a definite standard to which they must adhere in their relations with employees, and it gives the workers definite knowledge of what to expect from the management. This brings about a mutual understanding which is the basis of harmonious cooperation.

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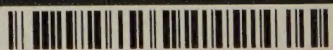
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